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Separated auxo-acid systems. VIII. Colour of *p*-nitrophenylacetylamides. IX. Colour of *p*-nitrophenylpropionylamides. V. A. LA-MATSKY and R. A. SHAROV (Concept. rend. Acad. Sci. U.R.S.S., 1934, 20, 666-673, 675-679).—VIII. *p*-Nitrophenyl-*p*-nitrobenzoyl-, m.p. 189°, and *p*-hydroxybenzoyl-, m.p. 228°, are almost colourless, but the *p*-dimethylaminobenzoyl-, m.p. 217°, is reddish-orange. (Cf. A., 1937, II, 64.) IX. *p*-*p*-Nitrophenylpropion-*p*-nitrobenzoyl-, m.p. 183°, is almost colourless, but the *p*-hydroxy-, m.p. 181°, and *p*-dimethylaminobenzoyl-, m.p. 225-5°, are pale yellow and reddish-orange, respectively. The authors' previous theories are modified to include the colours of these six compounds. R. S. C.

ASH 3.4 METALLURGICAL LITERATURE CLASSIFICATION

Separated auxo-enol systems. VI. The color of nitrobenzyl derivatives of aromatic amines. A. A. Leung, Skol and A. I. Stavrovskaya. *Zh. Obshch. Khim.* 36, 1047-1052 (1962); cf. *C. A.* 55, 4069. Previous explanations of color in nitrobenzyl derivatives of aromatic amines (I) (ranging from yellow to dark red or brown) as due to transformation into quinoid or nitro derivatives, by migration of H to  $\text{NO}_2$  or to  $\text{NH}$ , or as due to the formation of a conjugated chromophore system are considered unsatisfactory. Instead, it is postulated that the color is due to interaction, either intermolecular or intramolecular (not definitely decided), between the nitro-enol system ( $\text{O}=\text{N}-\text{Ar}-\text{CH}_2\text{H}$ ) and the auxo-enol system ( $\text{CH}_2\text{NH}-\text{Ar}'$ ) to form a complex in which deformation in both of the chromophore systems occurs, with the resultant production of color. Replacement of the  $\text{CH}_2\text{NH}$  group by  $\text{CH}_2\text{N}$  reduces the color intensity, indicating that unpaired electrons of the N atom in compounds of type I. Comparison of the colors of I with the corresponding nitro-azo compounds reveals that  $\text{N}=\text{N}$  and  $\text{CH}_2\text{NH}$  have practically the same chromophore properties. (4) references.

ASB 55.4 DETAIL ORIGIN LITERATURE CLASSIFICATION

Separated auto enol systems. VII. The influence of the second auto group on the color of nitrobenzylamines. V. A. Izmail'ski and V. I. Stavinskaya. *J. Gen. Chem.* (U. S. S. R.) 9, 100 (1938), cf. C. A. 33, 7748. In colored compds. of type  $(\text{O}_2\text{N})_2\text{ArCH}_2\text{NHAr}$  (I), the color is due to interaction between the nitro enol system  $(\text{O}_2\text{N})_2\text{ArCH}_2$  and the auxo group  $\text{NHAr}$ . Introduction of a 2nd auxo group ( $\text{OH}$ ,  $\text{OMe}$ ,  $\text{NMe}_2$ ) in the  $\beta$ -position to  $\text{NH}$  results in the formation of a di-auxo system,  $\text{NHCH}_2$  (auxo), with accentuation of the bathochromic effect. The effect on the color of  $\text{NHAc}$  and  $\text{Me}$  groups introduced in the  $\beta$ - and  $\alpha$ -positions is complicated by the phenomena of chromomerism. The following 2,4-dinitrobenzyl derivs. are prepd. by the method of Sachs and Kempf (*Ber.* 35, 1236 (1902)): 2,4-dinitrobenzylamine (II), reddish orange, m.  $94^\circ$ , from 2,4-dinitrobenzyl chloride (III) and  $\text{PhNH}_2$ ;  $m$ -toluidine deriv. (IV), bright orange, m.  $86^\circ$  from III and  $m$ -toluidine;  $p$ -toluidine deriv. (V), red, m.  $101^\circ$ ; 3-acetaminobenzylamine deriv. (VI), dark red, m.  $130^\circ$ ; 4-acetaminobenzylamine deriv. (VII), red or bright orange, m.  $131^\circ$ . V (orange) exhibits slightly greater bathochromism than either II (yellow form) or IV (orange-yellow). IV also exists as an unstable yellow form. The bathochromic effect of  $p$ -NHAc in VII (orange-yellow) is unexpectedly weak. VI exists as a yellow, extremely unstable form and as a dark red stable form. The marked accentuation of color obtained by introduction of a 2nd auxo group ( $\text{NHAc}$ ) in the  $\alpha$ -position could not be explained. I. L.

**Alkylation. VII. Preparation of diethylnitrandic acid and diethyl-*m*-aminophenol.** V. A. Izmail'skiy and B. A. Popov. *J. Applied Chem.* (U. S. S. R.) 12, 770 (1939) French, 785 (1939); cf. C. A. 33, 1263. One mol. of metandic acid was alkylated with 4.08 mols. of EtCl in excess to avoid the formation of mono-derivative in 730 cc. of EtOH in the presence of 2 mols. of NaOH (42% soln.) and 1.57 mols. of calcium soda at a temp. not lower than 125° in the autoclave, with a yield of 95.5% (theory). Under the same conditions but using 35% aq. NaOH, the yield was 60%. The Na salt of diethylnitrandic acid is sol. in 96% alc. which is advantageous for the purification of the product of reaction from mineral salts, especially since the soly. of mineral salts in 80% alc. considerably decreased in the presence of Na diethylnitrandate. The fusion of the aq. paste of Na diethylnitrandate (1 mol.) with 5% mols. of NaOH at 270-75° yielded 70.7% (theory) of diethyl-*m*-aminophenol (74% when KOH was used). Two modifications of diethyl-*m*-aminophenol were obtained, m. 54 and 74°, resp. VIII. Alkylation with ethyl chloride in the presence of calcium oxide and magnesium oxide. *Ibid.* 780-9.—Ethylation of metandic acid was carried out in alc. medium (not less than 80% of alc.) in the presence of CaO and MgO at 125-135°. In this case the same yield was obtained with only 50% excess of EtCl. The liberation of the product without diss. off the alc. was not possible because metandic decompos. with soda or Na<sub>2</sub>SO<sub>4</sub> proceeded in alc. soln. extremely slowly even on prolonged heating. It is explained by the complex formation of CaCl<sub>2</sub> with EtOH. A. A. Podgorny

A. A. Podgorny

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Electronic formulae of double and triple linkings. V. A. ISMAILSKI (Compt. rend. Acad. Sci. U.R.S.S., 1939, 23, 658-662).—Theoretical. W. R. A.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

15.96:

15.96: Molecular Structure

**Auxenoid systems.** XI. Classification of compound chromophoric systems containing electrophilic chromophores and auxenoid chromes. XII. Analysis of structural conditions which determine the colour of compounds with broken and unbroken conjugated systems. V. A. Izumshki (*Compt rend Acad Sci U R S S*, 1940, 26, 900-914, 915-919). XI. A method of classification based on the interaction between the auxenoid and chromophoric systems is suggested. The method recognises (a) compounds with conjugated auxenoid systems; (b) chromophoric systems with separate auxenoid systems in the same mol.; (c) chromophoric systems with an auxenoid chromophoric system separated in the mol. from the electrophilic system; (d) conjugated systems with auxenoid groups in non-linear positions relative to the electrophilic group; one part of the enol system is communal to the auxenoid and chromophoric systems. Resonance and electronic displacements and their influences on colour are discussed.

XII. Compounds are coloured not only when electrophilic chromophores and auxenoid chromes are in the same  $C_{60}$  nucleus, but also in systems where groups exist in two nuclei separated by divalent groups which interrupt the conjugation. The intensity of the colour depends on the "power" of the interacting systems (which is a function of the "power," no., and position of the principal polar groups) and on the structure of the conjugated system coupled to the polar groups. These generalisations, and the relations between colour and resonance, are exemplified and discussed. J. C. M. H.

1ST AND 2ND ORDERS		PROCESSES AND PROPERTIES INDEX		3RD AND 4TH ORDERS	
<p><i>ca</i></p> <p>The theory of color of organic compounds V. A. Izmail'skii. <i>Trudy Khimicheskoi Nauki</i> (Leningrad) 1960, 41 (2); Khim. Anilinno-Kresochnoi Khim. i Tekh. 1960, 41 (2); Khim. Referat. Zhur. 4, No 9, 121-4 (1941). The color of org. compds. is attributed to mesomerism. Analyses of the meso state in a <math>p</math>-dianis system indicate that the transition is under a counter-effect of 2 groups of identical polarities, resulting in mesomerism accompanied by a bathochromic effect. Such a system easily loses 2 electrons from the <math>p</math>-C atoms or from the amino atom, thereby being oxidized into quinone. Thus the introduction of an amino group into the <math>p</math>-position of the Ph nucleus of nitrophenylamine produces the bathochromic effect as the result of the increase in the activity of anion electrons of the N atom in the <math>NH_2</math> group and of the increase in the effect of this atom on the state of the system. The state of the individual systems of which the given mol. is composed must be considered for the analysis of bathochromic and hypsochromic effects. W. R. Henn</p>					
<p>ASH 11A METALLURGICAL LITERATURE CLASSIFICATION</p>					
<p>CLASSIFICATION</p>					

**syntheses of proposed antimalarial compounds. I. Relationship of structure and pharmacological properties.** A. Ismail'skil and A. M. Simonov. *J. Gen. Chem.* (U.S.S.R.) 10, 1380 (1940). - I. and S. state that pharmacological properties of mols. are probably due to the "condition" of individual atoms or groups in the mol. creating an external "field of the mol." which governs distribution and conversion of the material in the organism. They believe that the structure of many therapeutically active reagents of antimalarials contg. neither quinoline nor acridine nuclei. 3-Nitro-4-benzamidoanisole was prepd. in a 94% yield by dissolving 25.2 g. of 3-nitro-4-aminobenzoic acid in 200 cc. acetone, adding to it 20.7 g. of KOH powder (ignited) and, while stirring and cooling, 23.5 g. BrCl. The stirring was continued 2-3 hrs., then the mixt. was brought to a boil for a few min. On cooling a yellow orange cryst. product, m. 130-4.5°, sepd. The nitro compd. was reduced to the amino compd. (I) with Fe filings in AcOH. The yield was 82% of white needles, m. 200-200.5°. The amine was heated with BaH for a short time, yielding the benzylidene deriv., m. 96-7° (decolorized in a 90% yield (m. 116°) when a dil. HCl soln. of I was treated with NaNO<sub>2</sub>. A 60% yield of 4'-methylamino-3-(3-diethylamino-propylamino)anisole was obtained by heating 4.84 g. I and 3.3 g. H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Cl (10% excess) with 2 cc. abs. alc. 2 hrs. at 110-115°, 3 hrs. at 130-5° and 10 hrs. at 150-5°. The product was a thick oil which was dissolved in 200 cc. water at 50-60°. The

undissolved part was filtered off and the filtrate was washed with ether to ext. unreacted chloride. Then it was off and dried in a vacuum desiccator. The product was recrystd. 3-4 times from alc. and once from a 1:1 mixt. of CCl<sub>4</sub> and petr. ether; it m. 116-5.5° (cor.). C and N analyses check. Solns. of the mono-HCl salt in 1% are quite stable, are weakly acid and are bitter. 3-Nitro-4-phenylsulfonamidobenzamide was prepd. by nitration of PhSO<sub>2</sub>NHCH<sub>2</sub>H<sub>2</sub>OMe in glacial AcOH. It m. 116-5.5° of a product, m. 116.5-17.5°. II. (7-Diethylamino-3-propyl)benzimidazole. A. M. Simonov. *Ibid.* 1941-60. Compds. of the general formula MeOC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NEt<sub>2</sub> were synthesized. These compounds, when tried on birds showed no activity to *Plasmodium* infection. 4-(p-Tolylsulfonamido)benzamide (18.8 g.) in 30 cc. of glacial acetic acid cooled to 10° was added during 40 min. to 8.7 g. HNO<sub>3</sub> (d. 1.30) in 7 cc. glacial AcOH. Mixing at 10-15° was continued for 2 hrs. after which the 3-nitro compd. was filtered out; 31% yield of material m. 103.5-4° (cor.). The nitro compd. (3.600 g.) in 12 cc. concd. H<sub>2</sub>SO<sub>4</sub> was allowed to stand overnight, then poured into 100 cc. H<sub>2</sub>O and enough NH<sub>4</sub>OH was added to be smelled. A 98.8% yield of 3-nitro-4-aminobenzoic acid, m. 122-3° (from alc.), was obtained. 3-Nitro-4-(p-tolylsulfonamido)anisole (18 g.) in 100 cc. abs. alc. was refluxed for 12 hrs. with 16.5 g. H<sub>2</sub>N(CH<sub>2</sub>)<sub>3</sub>Cl and 2 g. ignited potash. The mineral salts were filtered off

and the alc. was evapd. The residue was dissolved in ether and the ether soln. was washed with NaOH, a. 2 H<sub>2</sub>O and dried over Na<sub>2</sub>SO<sub>4</sub>. The ether was evapd. and the residue was recrystd. from alc. More than 84% of 3-nitro-4-(N-(3-diethylamino)propyl)-p-tolylsulfonamide (I), m. 77.5-78°, was obtained. I (13 g.) after standing overnight in 25 cc. 90% H<sub>2</sub>SO<sub>4</sub> was poured on 80 cc. H<sub>2</sub>O and was neutralized with NH<sub>4</sub>OH. The oil formed was extd. with C<sub>6</sub>H<sub>6</sub>, dried over Na<sub>2</sub>SO<sub>4</sub>, and filtered. The C<sub>6</sub>H<sub>6</sub> was driven off and the residue (8 g.)

was fractionated *in vacuo*. An 83% yield of a red oil (II), b.p. 191.5-3.5°, was obtained. It did not solidify at -15°; its picrate has 2 forms, m. 114-15° and 120-7°. A 70% yield of 3-amino-4-(3-diethylamino)propylaminobenzimidazole (III), b.p. 106.8° (red), was obtained by reducing II with SnCl<sub>2</sub> in 1:1 HCl. III (7.7 g.) was gradually mixed with 6 g. Ac<sub>2</sub>O and heated on a water bath for 15 min. The reaction mixt. was dissolved in 30 cc. 4 N HCl and refluxed 1.5 hrs. The reaction product sep'd. as an oil with ether, dried over potash and filtered. The ether was evapd. and the residue was distd. *in vacuo*. A 98% yield of 2-methyl-5-methoxy-1-(3-diethylamino)propylbenzimidazole (IV), b.p. 184-5° (picrate, m. 230°), was obtained. 3-Nitro-4-acetamidobenzimidazole (63 g.) was added during 1 hr. to a well-agitated mixt. of 180 g. iron filings, 600 cc. H<sub>2</sub>O and 13.5 g. NaCl. The agitation was continued for 1.5-2 hrs. at 90°. The hot reaction mixt. was filtered and the solids were twice washed with 300 cc. of boiling H<sub>2</sub>O. A 90-2% yield of 3-amino-4-acetamido-

benzimidazole (V), m. 120-0.5° (red), was obtained. V (18 g.), 30.5 g. Et<sub>3</sub>N(CH<sub>3</sub>)<sub>2</sub>Cl and 3.5 cc. alc. were agitated and heated 2-3 hrs. at 110-15° and 13 hrs. at 130-60°. The cooled reaction mixt. was distilled in 40 cc. hot 10% potash. The dark oil was extd. with 400 cc. C<sub>6</sub>H<sub>6</sub>. A part of the oil did not dissolve in C<sub>6</sub>H<sub>6</sub>. It was dissolved in alc. The alc. soln. was filtered and dried. The alc. was driven off and an oily product, sol. in H<sub>2</sub>O, was obtained. It was a mixt. of quaternary salts. The C<sub>6</sub>H<sub>6</sub> ext. was washed with a small amt. of H<sub>2</sub>O, dried over potash and filtered. The C<sub>6</sub>H<sub>6</sub> was driven off and the residue was fractionated *in vacuo* 2-3 times. A 100% yield of 2-methyl-5-methoxy-1-(3-diethylamino)propylbenzimidazole (VI), b.p. 190.5-1.5°, was obtained; picrate, m. 218-19°. A mixture of VI (2.4 g.) and 2.3 g. H<sub>2</sub>O was heated at 100° for several hrs., then 100 cc. H<sub>2</sub>O and enough HCl for a weakly acidic reaction was added. The excess HCl was distd. with steam. The hot soln. was filtered and evapd. to dryness. The residue was dissolved in a small amt. of alc. and pptd. with ether. A yield of 2.5 g. of 6-methoxy-2-ethyl-1-(3-diethylamino)propylbenzimidazole-2HCl dihydrate (VII) was obtained. It loses H<sub>2</sub>O of crystn. at 100° and m. 234-6°. V (27 g.), 13.5 g. Ac<sub>2</sub>O and 100 cc. 4 N HCl were refluxed 1 hr. The HCl salt pptd. in the cold was filtered off and washed with 4 N HCl and dissolved in 100-150 cc. H<sub>2</sub>O. It was neutralized with NH<sub>4</sub>OH, yielding 70% of 2-methyl-5(6)-methoxybenzimidazole (VIII), m. 141.5-2.5° (from petr. ether); picrate, m. 197°. A mixt. of 8.1 g. VIII and 7.55 g. Et<sub>3</sub>N(CH<sub>3</sub>)<sub>2</sub>Cl in 40 cc. alc. was agitated and heated 3 hrs. at 110-15° and 13 hrs. at 130-6°. It was treated with 20 cc. hot 10% extd. with ether, and the aq. layer was treated with 50 g. of 80% potash. The tepd. oil was extd. with 100 cc. C<sub>6</sub>H<sub>6</sub>. The C<sub>6</sub>H<sub>6</sub> soln. was extd. with NaOH soln. and dried over potash. After evapn. of the C<sub>6</sub>H<sub>6</sub> the oil was distd. at 25 mm. The yield was 43.5 g., m. 189-0.1°; picrate, m. 220-0.1°. David Aubrey

1ST AND 2ND PAGES		PROCESSING AND SUBMITTING NOTES	
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<p><b>Auxo-enold systems. XIV. Concerning the preparation of 8-nitro-1-naphthylmethyl chloride and the colors of the arylamine derivatives.</b> V. A. Ismail'skii and A. N. Kozin. <i>Compt. rend. acad. sci. U. R. S. S.</i> 28, 621-4 (1940) (in German); cf. C. A. 34, 784174. — 1-C<sub>10</sub>H<sub>7</sub>CH<sub>2</sub>Cl, nitrated in Ac<sub>2</sub>O with HNO<sub>3</sub> (d. 1.52) at 5-15°, giving a thick yellow oil from which the 8-nitro deriv. seps. on standing. The compd. can be recrystd. out of alc. (or benzene, or less efficiently out of benzene. At 15°, it is difficultly sol. in benzene, ligroin, better in alc. and very sol. in benzene and ether. It m. 105°. Its constitution is established by oxidation with 15-30% HNO<sub>3</sub>. The arylamine and its derivs. form a series of highly colored compds. providing the nitro group are in an unsym. position relative to the CH<sub>2</sub> group and a quinoid configuration in the <i>auxi-nitro</i> form is not possible. The color series is classified on the basis of the intramod. split auxo-enold system: (Eph)-K-Q-(Auxo)-K where K is an enold system, in this case the conjugated system of the aromatic nucleus; (Auxo) is the "donor group" or auxo-chrome; (Eph) the electrophilic group NO<sub>2</sub>; and Q the conjugation-disrupting group —CH<sub>2</sub>— free from double bonds. The series (auxo group, color of crystals, color of powder, m. p., resp.) is: H, orange, orange-yellow, 101°; <i>p</i>-Me, red, bright red, 74°; <i>m</i>-Me, orange, orange, 100°; <i>p</i>-OMe, red, orange, 150°; <i>m</i>-OMe, orange, orange, 81.5°; <i>p</i>-OH, dark red, dark red, 130°; <i>m</i>-OH, brown-red, brown-red, 135.5°. These are produced by heating the chloride 1 hr. at 40° with the corresponding arylamine. The production of color is connected with the action of complex-building forces and the appearance of "complex mesomers."</p> <p>S. R. Kozin</p>			
<p>ASB-SLA METALLURGICAL LITERATURE CLA</p>			
<p>SEARCHED</p>		<p>INDEXED</p>	
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>		<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>	

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Separated donor- $\pi$ -acid systems. XVII. Color of nitrobenzoyl and nitrobenzyl derivatives of 8-aminocephalothene and 2-aminoisocoumarin. V. A. Izmail'skii. *J. Gen. Chem.* (U. S. S. R.) 13, 685-62 (1944) (English summary); cf. C. A. 36, 436<sup>4</sup>.--To designate the complex of electron donor and chromophore, I. proposes the term "donor- $\pi$ -acid system," instead of the previously used "auxochrome." The coloration of Uamitser's compds. (C. A. 36, 4110<sup>4</sup>) is due only to the direct interaction of 3 individual systems, donor- $\pi$ -acid and nitro- $\pi$ -acid, of the compds. in question. XVIII. *N*-(*p*-Nitrophenethyl)-aniline and its derivatives. V. A. Izmail'skii and Z. M. Batrakov. *Ibid.* 693-6. --*p*-Nitrophenethyl chloride (from nitration of  $\text{PhCH}_2\text{CH}_2\text{Cl}$ ), m. 49°, was reacted with 7 mols. of  $\text{PhNH}_2$  at 135-40° for 6-10 hrs.; the mixt. was treated with 5%  $\text{HCl}$ , washed with  $\text{Na}_2\text{CO}_3$  soln. and water and crystal. from  $\text{EtOH}$  to yield *p*- $\text{O}_2\text{NC}_6\text{H}_4\text{CH}_2\text{CH}_2\text{CH}_2\text{N}(\text{HPh})_2$ , m. 60° (from  $\text{EtOH}$ ), a yellow solid. The  $\text{EtOH}$ -insol. residue yielded *p*- $\text{O}_2\text{NC}_6\text{H}_4\text{CH}_2\text{CH}_2\text{CH}_2\text{NPh}_2$ , m. 171° (from benzene), a yellow solid. The 1st compd. yields the correct ending: *N*-formyl compd., by heating with 80%  $\text{HClO}_4$ , m. 71° (from  $\text{AcOH}$ ), a colorless solid; *N*-Ac compd., from  $\text{Ac}_2\text{O}$ , m. 91° (from  $\text{EtOH}$ ), a faintly yellow solid. Heating of  $\text{O}_2\text{NC}_6\text{H}_4\text{CH}_2\text{CH}_2\text{Cl}$  with 2 mols. *p*-anisidine at 135-40° for 10 hrs. gave *N*-(*p*-nitrophen-

ethyl)-*p*-anisidine, m. 83° (from  $\text{EtOH}$ ), deep red solid, giving on formylation and acetylation deep red solids, which do not give satisfactory anal. results. The analogously prepd. *N*-(*p*-nitrophenethyl)-*p*-anisidine, m. 134° (red-brown), and *p*-(*p*-nitrophenethylamino)acetanilide, m. 177° (yellow-brown). Exchange reaction between *p*-nitrophenethyl chloride and  $\text{NaI}$  gave the corresponding iodide, solubles, m. 97° (from  $\text{EtOH}$ ). G. M. K.

**Separated donor enoid systems. XII.** Color effects in *N*-(3-phthalimidopropyl) and *N*-(2-phthalimidoethyl) derivatives of aromatic amines. A. V. Reksvetov and V. A. Izmail'skii. *J. Gen. Chem. (U.S.S.R.)* **14**, 216-25 (1944) (English summary); cf. *C.A.* **39**, 791<sup>1</sup>.—When *N*-phthalimide and  $\text{Cr}(\text{Cl}_3)_3$  in 1:4 mol. ratio are refluxed 5 hrs. at 151.65°, they give 100% *N*-(3-chloropropyl)-phthalimide (1), m. 67.5-8.5°.  $\frac{1}{2}$  and  $\frac{1}{3}$  PhNH<sub>2</sub> give a mixt. from which fractional crystn. from EtOH seps. *N*-(3-phthalimidopropyl)aniline, yellow, m. 93.5-5°, and *N*-(3-bis(3-phthalimidopropyl)aniline, pale yellow, m. 145.5-6.5°. Similar reactions give *N*-(3-phthalimidopropyl)-*p*-anisidine, yellow, m. 91.8-2.5°, and *N*-(3-bis(3-phthalimidopropyl)-*p*-anisidine, orange, m. 127.8-0°; and *N*-(3-phthalimidopropyl)-*p*-acetaldehyde, orange, m. 176-6.5°, and *N*-(3-bis(3-phthalimidopropyl)-*p*-acetaldehyde, pale yellow, m. 136.8-7.5° (all m. ps. cov.). All HCl salts of these compds. are colorless. Since the color cannot be due to interaction of the electron donor group A and the electron acceptor B along a conjugated chain, it must be due to interaction of the external fields, giving a form of complex resonance. The decreased color of the diphtalimide compds. is due either to branching of the chains with smaller interaction of the external fields, or to weakened deformation of the A groups due to dispersion of their

effects over 2 H groups). **XXII.** Color effects in 3-phthalimidopropyl ethers of phenols. A. V. Belovskaya. *Ibid.*, 229-35. N-(3-Chloropropyl)phthalimide reacts when heated with  $K_2CO_3$  and RCOOH to give a complex of the type  $Ca(C_6H_4CO)_2N(CH_2CH_2CH_2O)_2$ . The ether in which R = H m. 91.5-2° and is colorless. When R = OMe, the colorless ether (I) m. 105-6°. A by-product in the formation of I is N-(3-p-methoxyphenyl)propylphthalimide acid, m. 142.5-5°, which is converted to I by long boiling with 50% EtOH. The colorless ether in which R = AcNH m. 103.8-4.3° (II), and the by-product N-(3-(p-acetamidophenyl)propyl)phthalimide acid, m. 180-0.5° (decompos.), is also formed and gives II with EtOH. Hydrolysis of II gives the ether in which R = NH<sub>2</sub> (III), orange, m. 97.5-93°. When R = NM<sub>2</sub> (IV), the orange-yellow ether m. 160.0-04.9°. Thus the phenol ethers have less color than the corresponding derivs. of aromatic amines. The bathochromic effect of the NH<sub>2</sub> and NM<sub>2</sub> groups is confirmed. Sols. of IV have a deeper color than those of III, but the reverse is true in the solid state. H. M. Leicester.

H. M. Lenz et al.

# ASM-55A METALLURGICAL LITERATURE CLASSIFICATION

1994 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

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2004: 2004. 2004. 2004.

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Polysyl methane compounds. I. Color of derivatives of diphenylmethane and triphenylmethane having the nitro and the donor groups in different nuclei. V. A. Pyzdina, D. K. Surkov and M. A. Volodina. *J. Gen. Chem.* (USSR) 13, 834-47 (1943) (English summary). -- brown-red crystals which decompose from a pale yellow EtOH soln. *p*-(*p*-Nitrophenylamino)-*p*'-dimethylaminodiphenylmethane, m. 130° (from EtOH) (from the amine and system, Q = a bivalent group breaking the conjugated system), K = conjugated group (the alkylidene), red needles which deposit from pale milky EtOH and benzene. *p*-(*p*-Nitrophenylamino)-*p*'-dimethylaminodiphenylmethane, m. 110° (from EtOH), orange donor-acceptor systems the colors are similar. The appearance of color does not depend on proton migration with crystals. II. Color of the derivatives of tetraphenylmethane having the nitro and the donor groups in the intense color of compounds of the type  $(\text{C}_6\text{H}_4)_4\text{C}$ ,  $\text{C}_6\text{H}_4\text{C}(\text{NMe}_2)_2$ , these compounds also have an unstable colorless form. The color is apparently produced by interaction of the external fields of the complex chromophore groups, as shown by comparison of compounds containing NO<sub>2</sub> and NH<sub>2</sub> or NR<sub>2</sub> groups in the same or different rings in unconjugated positions; the independent interaction of the external fields may have a greater effect than has been assumed by the resonance theories. *p*-Nitro-*p*'-dimethylaminodiphenylmethane, prep. by condensation of *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>Cl with PhNMe<sub>2</sub> in AcOH, yellow solid, m. 187° (from EtOH), 189° (from pyridine). *p*-Me-C<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NHCH<sub>2</sub>Me-*p*, heated with PhNH<sub>2</sub> in dil. HCl, gave *p*-amine *p*'-dimethylaminodiphenylmethane, m. 90°, b.p. 215°, almost colorless pale yellow crystals. The above yielded on treatment with *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>COCl in benzene, (*p*-(*p*-nitrobenzamido)-*p*'-dimethylaminodiphenylmethane, m. 177° (from EtOH), deep-red crystals. *p*-(*m*-Nitrobenzamido)-*p*'-dimethylaminodiphenylmethane (no const. given) was prep. analogously and isolated in white crystals from benzene and crystals from EtOH. *p*-(3,5-Dinitrobenzamido)-*p*'-dimethylaminodiphenylmethane (no const. given on prep.), m. 181° (from EtOH). The color formation in tetraphenylmethane (tetra-phenylmethane) derivatives is explained on a basis similar to that of di- and triphenylmethane compounds (see above, Part I). *p*-Dimethylaminodiphenylmethane (from PhCOH and PhNMe<sub>2</sub>·HCl in AcOH), m. 210° (from benzene-EtOH), colorless felted needles. *p*-Aminodiphenylmethane (from PhCOH and PhNH<sub>2</sub>·HCl in AcOH), m. 219-20° (from PhMe), yielded *p*-nitro-*p*'-dimethylaminodiphenylmethane, m. 154.5° (from benzene-EtOH) upon diazotization and treatment with KI; pale yellow needles. *p*-(*p*-Benzoylamino)tetraphenylmethane, m. 187-8°, from diazotized *p*-H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>Ph, treated with quinone in the presence of NaOAc; light brown crystals. *m*-Nitro-*p*'-dimethylaminodiphenylmethane (from *m*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CHO and benzene in the presence of H<sub>2</sub>SO<sub>4</sub>, colorless crystals, m. 90° (from EtO or EtOH), yields *m*-nitro-*p*'-dimethylaminodiphenylmethane (K) on treatment with H<sub>2</sub> in C<sub>6</sub>H<sub>6</sub> in ultraviolet light as a yellow oil. *p*-Nitrodiphenylmethane (from *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CHO and benzene in the presence of H<sub>2</sub>SO<sub>4</sub>), m. 90°, gave *p*-nitro-*p*'-dimethylaminodiphenylmethane.

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phenylmethyl bromide (II) on bromination as above, colorless, m. 136-7° (from  $\text{Et}_2\text{O}$ -benzene). *p*-Nitrobenzophenone, m. 136-6°, heated with 1.25 molar  $\text{PCl}_5$  gave *p*-nitrobenzophenone dichloride, m. 55-7° (33%), which was treated with benzene in the presence of  $\text{AlCl}_3$  under various conditions; neither a tri- nor tetraphenyl deriv. could be isolated. I heated with  $\text{PhNHMe}$  in  $\text{AcOH}$  gave lemon-yellow crystals of *m*-nitro-*p'*-dimethylaminodiphenylmethane, m. 162-3° (from  $\text{Et}_2\text{CO}$ ) (47%). Similarly, II gave yellow-orange *p*-nitro-*p'*-dimethylaminodiphenylmethane, m. 208-7° (from  $\text{Me}_2\text{CO}$ ) (34%). I, heated with  $\text{PhOH}$  in the presence of  $\text{AcOH}$  and  $\text{H}_2\text{SO}_4$ , gave almost colorless *m*-nitro-*p'*-hydroxydiphenylmethane, m. 154-51° (from petr. ether), which turns yellow in the presence of alkali. I, heated with  $\text{PhNH}_2$ ,  $\text{HCl}$  in  $\text{AcOH}$ , gave *m*-nitro-*p'*-aminodiphenylmethane, m. 117-21° (from dil.  $\text{HCl}$ ), as yellow-green grains; oxalate, m. 198-30°.

O. M. K.

<p>CA</p> <p>17</p> <p>A water-soluble camphor. Camphor VI. V. A. <i>Ismail'skiy. Doklady Akad. Nauk S.S.S.R.</i> 42, 216-20; <i>Compt. rend. acad. sci. U.R.S.S.</i> 42, 212-15(1944) (in English).—Stable aq. dispersions of camphor (I), useful for intravenous administration to counteract shock, were prepd. by using combinations of alc. and Na salicylate (II) to solubilize I. Stable aq. dispersions of I were not obtained by using either alc. or II alone. By increasing the alc.: I ratio from 5:1 or 10:1 to 20:1, the II:I ratio, required for stably dispersing I, was reduced greatly. Typical stable dispersions contained 1.0% to 2.0% I, 30% to 20% alc. and 25% II. Renorchol had a solubilizing action similar to that of II but glycerol, glucose and the Na salts of phthalic, <math>\beta</math>-naphthalenemulfonic, camphorsulfonic and benzoic acids proved ineffective. A favorable effect on shock was observed in preliminary expts. with the NH<sub>4</sub> salts of <i>l</i>-camphorsulfonic and <i>l</i>-camphocarboxylic acid and with <i>l</i>-borneol derivs. of the type <math>C_{10}H_{17}ORCOOH</math> and <math>C_{10}H_{17}OCORCOOH</math>, prepd. from phthalic and succinic acids. J. W. Perry</p>	
<p>ADD-31A METALLURGICAL LITERATURE CLASSIFICATION</p>	

IZMAILSKY, V. A.

"Resonance and Colourity of the Lichonilamine Derivatives. (XXIII) in the Conjugated Systems Bound by the Donor N-Atom." by V. A. Izmailsky and A.M. Simonov (p. 1459)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1946, Volume 16, No. 10

[illegible]

"Resonance and Colourity of the 14-Benzidine Derivatives. I. Part. On the colourity of the 2,4-Dinitrodiphenylamine Derivatives. The Radiotropic Effect of an Additional Group in the Para-Position and Resonance of a Tri-Ener System." by A. N. Sironov and V. A. Izrael'sky (p. 166)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1946, Volume 16, No. 10

*Color of cyanine dyes. Absorption of light by molecular compounds between quinolines or pyridine salts and amines. V. A. Ismail'ski and P. A. Solodkov. Doklady Akad. Nauk S.S.S.R. 60, 187-90 (1948). -On the*

basis of the previously given classifications, the color of a 1,1'-dialkylpyrroloquinone salt is detd. by the interaction between the quinolinic electrophilic component (the imonium chlorophor C:N<sup>+</sup>) and the electrodonor (amine component). By analogy, mol. compds. involving similar electrophilic and electrodonor groups, but not sepl. by CH or a similar group (Q), should absorb in very much the same way as the cyanines. The following are examples of such mol. compds. with 1-methylquinoline *p*-toluenesulfonate (II), 1-ethylquinoline iodide (II), and 1-benzylquinoline chloride (III); the compds. with I are formed on grinding the dry substances, compds. with II and III only on wetting with the solvent. The data refer to solns. about 0.07-0.08 M, and give, in that order: the mol. compd. (color in solid state), solvent, color of soln.,  $\lambda_{max}$  in m $\mu$ ,  $\log I_0/I$  (concn. in mole/liter): Ph<sub>2</sub>NH + I (yellow-brown), CHCl<sub>3</sub>, red-brown, 512, 3.0)

(0.0625); the same in EtOH, red-brown, 480, 2.65 (0.0625); Ph<sub>2</sub>NH + III (ruby-red after recrystn. from amyl alc.), EtOH, red-brown, 600, 1.63 (0.0625); Ph<sub>2</sub>NH + II (brown-red), EtOH, brown-red, 482, 2.22 (0.0751); Ph<sub>2</sub>NMe + I (light yellow), CHCl<sub>3</sub>, orange-yellow, 440, 0.92 (0.0625); *p*-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHAc + I (dark brown-red), CHCl<sub>3</sub>, deep red-brown, ~480, broad band (0.0619); *p*-MeC<sub>6</sub>H<sub>4</sub>NMe<sub>2</sub> + I, CHCl<sub>3</sub>, yellow-brown, 435, 1.30 (0.0625); PhNMe<sub>2</sub> + I, CHCl<sub>3</sub>, yellow, 446, 1.15 (0.0625). At concns. 0.02-0.04 M (1-2%), the complexes dissociate, absorption falls rapidly, and  $\lambda_{max}$  moves towards shorter wavelengths. These mol. compds. are all decompd. by H<sub>2</sub>O. Analogous colored compds. are formed also by pyridine salts, e.g., 1-methylpyridine *p*-toluenesulfonate (IV) + PhNMe<sub>2</sub>, light yellow; IV + Ph<sub>2</sub>NH, intensely yellow; IV + *p*-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHAc, brown-yellow; IV + *p*-MeC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub>, lemon-yellow. With phenols (hydroquinone, 1- and 2-naphthol), pyridine and quinoline salts give yellow products of various shades. The deep colors of the mol. compds. cannot be interpreted by dipole deformations or van der Waals forces but are instances of a particular type of complex resonance (I. C.A. 34, 7841; I. and Belotvetov, U.S.S.R. 30, 430<sup>2</sup>). The color phenomena of the mol. compds. described are no doubt related to the color of microquinonoid compds. and quinhytrone. N. Thon

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

IZMAIL'SKIY, V. A.

PA 7715

USSR/Chemistry - Benzene, Electron  
Formulas of  
Chemistry - Naphthaline

Apr 1948

"The Principle of Alternation of Spin and  $\pi$ -Electron  
Formulas; Benzene, Naphthaline, Oxygen and Other Ex-  
amples," V. A. Izmail'skiy, Moscow State Pedagogical  
Inst imeni V. P. Potemkin, 4 pp

"Dok Ak Nauk SSSR" Vol LX, No 3

Discusses principles of alternation of spin and  
applies theories to molecules of various chemical  
compounds. Submitted by Acad A. Ye. Poray-Koshits  
26 Feb 1948.

7715

Intermolecular interactions and color. Absorption spectra of molecular compounds of quinolinium salts with aromatic amines. V. A. Izmail'skii and P. A. Sokolov (V. P. Potirinkin Pedagog. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 75, 301-4 (1950). *Abstracts* related chromophores may develop color under suitable conditions (C.A. 43, 407); this may occur even in intermol. complexes. Spectra of 2-( $\beta$ -dimethylaminostyryl)quinoline (I) and 1-ethyl-2-styrylquinolinium iodide (II) were obtained. At  $10^{-4}$  M the substances show absorption max. at 338 m $\mu$ , resp., with  $\epsilon$  37,700 and 24,700, resp. An equimolar mixt. of I and II at  $10^{-4}$  M gives max. at 392 m $\mu$  (39,300), and at  $10^{-3}$  M max. at 508 m $\mu$  (24,000). A 4:1 mixt. at  $10^{-4}$  M gives a max. at 608 m $\mu$  (23,200), while I ethiodide in MeOH gives at  $10^{-4}$  M a max. at 635 m $\mu$  (64,000), in H<sub>2</sub>O it is 491 m $\mu$  (37,000), while its equimolar mixt. with I in MeOH gives at  $10^{-4}$  M a max. at 537 m $\mu$  (73,800). The curves are reproduced. It is pointed out that a conjugated C-bond bridge is not an essential condition for color development. The ability to form colored complexes is greatest in I, and smaller in simpler molecules such as Ph.NMe<sub>2</sub> and Ph.NH<sub>2</sub>. The same general factors modify color in such systems as are operative in usual electrophile-electron donor systems in conjugated chromophores. It is suggested that a new type of electronic bond, named exo-bond, may exist, which differs from the  $\pi$ -bond by absence of accompanying  $\sigma$ -bond.

G. M. Kowaloff

Chem Abs V48

1-26-54

Electronic Phenomena

Absorption spectra of molecular complexes of aromatic amines with quinolinium salts. Absorption spectra of molecular complex of 4-(*p*-dimethylaminostyryl)quinoline with 1-ethyl-2-styrylquinolinium iodide. V. A. Izumil'skiy and P. A. Sidorov (V. P. Potemkin Fed. Inst. Mol. Chem. Doklady Akad. Nauk S.S.S.R. 61, 1119, 1953; cf. C.A. 43, 407i; 45, 4557b).—The mol. complex (I) of 2-(*p*-

dimethylaminostyryl)quinoline with 2-styryl-1-ethylquinolinium iodide has abs. max. 505 mμ ( $\epsilon$  43,300). With the corresponding mμ styryl compd. of hemicyanine type (2-(*p*-dimethylaminostyryl)-1-ethylquinolinium iodide, m. 240°) the complex has an abs. max. 525 mμ (61,000). This confirms the earlier suggestion that an exomol. complex can form a chromophore system whose optical effects are close to those of a corresponding conjugated mol. system. The mol. complex of 4-(*p*-dimethylaminostyryl)quinoline (III) with 1-ethyl-2-styrylquinolinium iodide at 1:1 compn. has abs. max. 403 mμ, which agrees with that of III, with complete dissocn. of the complex, at concn. in MeOH of 10<sup>-3</sup> mole/l.; at 10<sup>-4</sup> concn. abs. max. is 530 mμ ( $\epsilon$  12,000) showing the complex formation and a bathochromic shift. Further increase of concn. does not affect the abs. max. position but increases the intensity to 30,800 at 10<sup>-2</sup> concn. Thus the shift of the dimethylaminostyryl group from ortho to para position gave a bathochromic effect of 25 mμ, with a drop in  $\epsilon$  from 43,300 to 30,800. This corresponds to the phenomena found in hemicyanines with styryl groups. The complex of III with 1-ethylquinolinium iodide does not form at 10<sup>-3</sup> concn., and even at 10<sup>-4</sup> concn. only a minute amt. of complexing occurs.

G. M. Kosolapov

③ Phys

6/2/54

Zadania I Cwiczenia Z Chemii Organicznej (Assignments and Exercises of Organic Chemistry, by) (V. A. Izmail'skiy) (A. Simonov) (and) (Ye. Smirnov) Warszawa, Panstwowe Wydawnictwo Naukowe, 1954.

460 P. Illus., Tables.

Bibliography: P. (463)

Translated From The Russian: Uprazhneniya Po Kursu Organicheskoy Khimii.

SO: N/5

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IZMAIL'SKIY, V.A., professor, *nasluzhennyy deyatel' nauki*.

Basic manual for chemical technology (*"General chemical technology."*  
S.I.Vol'fkovich, A.P.Egorov, D.A. Epshtein. Reviewed by V.A. Iz-  
mail'skii.) *Khim.v shkole* 9 no.5:69-70 S-O '54. (MLRA 7:9)  
(Chemistry, Technical) (Vol'fkovich, Semen Isaanovich)  
(Egorov, A.P.) (Epshtein, David Arkad'evich)

IZMAIL'SKIY, V.A.; SMIRNOV, Ye.A.

Isolated chromophoric systems. Part 29. Comparative spectroscopic studies of 4-nitrobenzylidene and 4-nitrobenzyl derivatives of aromatic amines. Zhur.ob.khim.25 no.7:1400-1412 J1'55.

(MIRA 8:12)

1. Moskovskiy gorodskoy pedagogicheskiy institut imeni V.P.Potemkina i Moskovskiy neftyannoy institut imeni I.M.Gubkina.  
(Amines--Spectra)

SPSHTEYN, D.A., prof.; IZMAIL'SKIY, V.A., prof.; BARANNIK, V.P., dots.;  
BALOTSEV, A.V., dots.; SMIRNOVA, M.I., tekhn. red.

[Programs of pedagogical institutes; elements of chemical technology for natural science-faculties of pedagogical institutes]  
Programmy pedagogicheskikh institutov osnovy khimicheskoi tekhnologii dlia fakul'tetov estestvoznaniia pedagogicheskikh institutov, Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1956. 12 p. (MIRA 11:9)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye vysshikh i srednikh pedagogicheskikh uchebnykh zavedeniy.  
(Chemistry, Technical—Study and teaching)

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619410003-7"

Category: USSR / Physical Chemistry - Molecule. Chemical bond.

B-4

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29585

Author : Izmail'skiy V. A., Guseva A. N., Solov'yeva Ye. S.

Inst : not given

Title : Exomolecular Interaction and Coloration. VI. Investigation of Absorption Spectra of Molecular Complexes of 1,3-Dinitro-benzene and 2,4-Dinitro-Stilbene with Dimethylamino-Stilbene

Orig Pub: Zh. obshch. khimii, 1956, 26, No 6, 1766-1778

Abstract: The following were studied: reflexion spectrum of 2,4-dinitro-4'-dimethylamino-stilbene (I), its absorption spectra (AS) in CH OH, alcohol, benzene and pyridine, and the AS of the following mixtures: 1) 2,4-dinitrostilbene (II) and 4-dimethylamino-stilbene (III), 2) m-dinitro-benzene (IV) and III, 3) IV and C<sub>6</sub>H<sub>5</sub>N(CH<sub>3</sub>)<sub>2</sub> at different concentrations in pyridine, in the visible region. The  $\lambda_{max}$ ,  $\lg \epsilon$  and AS curves are given. It was found that the region of absorption of II + III is very close to that of I, due to exomolecular interaction (EMI) of electrophilic and electron-donor chromo-

Card : 1/2

the same being also true of the other series. These results indicate that the acetoacetic group cannot be regarded as the main chromophore, contrary to the views expressed in the literature. The results are discussed in the context of the phenomenon of color in such compounds is presented, based on the theoretical effect of the displacement of the substituent groups on the absorption of acetoacetic series. The results are discussed in the context of the phenomenon of color in such compounds is presented, based on the theoretical effect of the displacement of the substituent groups on the absorption of acetoacetic series.

AUTHORS:

Ismail'skiy, V.A., Vishnevskiy, L.D.

SOV/63-3-6-31/4

TITLE:

Spectra of Absorption and Reflection of Anilide of 9-acridinic-propionic acid and its n-aniside (the effect of the substituents on the absorption and reflection spectra of the anilide and n-aniside).

FROM:

Khizhchinskaya nauka i pechishennost', L.D., Vol III, No. 1, 1963 (USSR)

ABSTRACT:

Various structures with chromophoric systems have been investigated. The anilide of the 9-acridinic-propionic acid and the n-aniside of the same acid are only slightly differentiated in the spectrum. With the transition to acridinic salts the coloring becomes more intensive. The ethyliodide of the anilide is intensively yellow, but the ethyliodide of n-aniside is dark red. The color may become violet or blue in some cases, if the electron supply is increased. There are 2 graphs and 6 references, 5 of which are Soviet and 1 American.

Card 1/2

*Moscow Pedagogical Inst. im V.P. Potemkin*

SOV-3-58-9-7/36

**AUTHOR:** Suvorov, N.P., Docent, Candidate of Physico-Mathematical Sciences, RSFSR Academy of **Pedagogical Sciences**

**TITLE:** The Teacher Must Receive a Diploma Corresponding to His Knowledge (Uchitel' dolzhen poluchat' diplom sootvetstvuyushchiy yego znaniyam)

**PERIODICAL:** Vestnik vysshey shkoly, 1958, Nr 9, pp 29-32 (USSR)

**ABSTRACT:** Secondary school teachers of chemistry are trained either by the chemical faculties of universities, by the faculties of biology, chemistry and fundamentals of agriculture of pedagogical institutes or by the biology and soil faculties of universities. The majority of teachers come from the faculties of natural sciences of pedagogical institutes and the biological-soil faculties of universities. Graduates of these faculties are, by their basic speciality, biologists, and the duties of chemistry teachers are imposed on them additionally. The majority of specialist-chemists, who have graduated from the chemical faculties of universities, enter the employ of scientific institutions or the chemical industry, and only a few become teachers. The author points out that often chemistry teachers of senior classes have only little knowledge of

Card 1/3

SOV-3-58-9-7/36

The Teacher Must Receive a Diploma Corresponding to His Knowledge

chemistry and physics. He refers to Professor V.A. Izmail'skiy's report "On the Training of Teachers of Chemistry at Pedagogical Institutes" which was discussed on March 1953 by a large conference of the Institut teorii i istorii pedagogiki Akademii pedagogicheskikh nauk RSFSR (Institute of Theory and History of Pedagogics, RSFSR Academy of Pedagogical Sciences). The report proved the inadequacy of the training of teachers of chemistry at pedagogical institutes. Yet it was only now, after 5 years and subsequent to the May plenum of the TsK KPSS, that the Board of the RSFSR Ministry of Education adopted a resolution which realized both Professor V.A. Izmail'skiy's suggestion and that of the Mendeleev Society. The author quotes the resolution, and states that the Ministry should discontinue qualifying persons as teachers of chemistry, who have graduated from the biological-soil faculties of universities and faculties of

Card 2/3

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619410003-7

The Teacher Must Receive a Diploma Corresponding to His Knowledge

natural sciences of pedagogical institutes.  
There is 1 table.

ASSOCIATION: Akademiya pedagogicheskikh nauk RSFSR (RSFSR Academy of Pedagogical Sciences)

Card 3/3

AUTHORS: Izmail'skiy, V. A., Vishnevskiy, L. D. SO7/20-121-1-30/55

TITLE: Absorption Spectra of Molecular Complexes Formed by 9-(p-Dimethylaminostyryl)-Acridine and 10-Ethyl-9(β-Carbomethoxyethyl)-Acridine Iodide (Spektry pogloshcheniya molekulyarnykh kompleksov 9-/p-dimetilaminostiril/-akridina s 10-etil-9/β-karbometoksi-etil/-akridiniyiodidom)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 1, pp. 111-114 (USSR)

ABSTRACT: It is a generally known theorem that for the bathochromic shift of the coloration an uninterrupted conjugated K-system has to exist between the interacting chromophorous components, i.e. between the electrophile (B) and the electron emitting (A) components (an endomolecular conjugation of the chromophores, "optic conjugation", Ref 1). B and A form together a generalized π-electronic system - the Ko-chromophore (Ref 3). Compounds with isolated chromophorous systems AK and BK may also have an intensive coloration; the systems are separated by a group which interrupts the conjugation (Refs 2, 3) if strong electron emitting AK- and electrophilic BK systems exist. In the last case the intensive coloration depends on the exomolecular con-

Card 1/4

SOV/20-121-1-30/55

Absorption Spectra of Molecular Complexes Formed by 9-(p-Dimethylaminostyryl)-  
-Acridine and 10-Ethyl-9( $\beta$ -Carbomethoxyethyl)-Acridine Iodide

sibility of a re-etherification (pereeterifikatsiya) must be re-  
jected as well, since 1) the component solutions AK and BK were  
prepared separately and were not heated before the spectroscopic  
investigation, 2) because both components are acridine compounds  
The authors suggest in connection with the above mentioned  
facts a hypothesis: according to which the bathochromous effect  
in the case of the concentration increase of acridine iodide  
(Table 1 Nr 1 - 3) is connected with the formation of a molec-  
ular complex of the type (AK' + BK), above all for a chloro-  
form solution. BK is the acridine salt, AK' a pseudosalt of the  
latter. There are 1 figure, 1 table, and 13 references, 10 of  
which are Soviet.

ASSOCIATION: Moskovskiy gorodskoy pedagogicheskiy institut im. V. P.  
Potemkina (Moscow Municipal Pedagogical Institute imeni V P  
Potemkin)

PRESENTED: March 15, 1958, by B. A. Kazanskiy, Member, Academy of Sciences,  
Card 3/4 USSR

5(3)

SOV/63-4-2-22/39

AUTHORS: Izmail'skiy, V.A., Malygina, A.V.

TITLE: Spectra of the Derivatives of 1-(Benzene-Azo)-2-Naphthol Containing Counter-Polarized Electron-Donor Systems

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 2, pp 279-280 (USSR)

ABSTRACT: The conclusion was drawn from [Ref 1-3] that the presence of two donor chromophors in n-position produces a system with increased electron-donor properties due to counter-polarizing effects. This conclusion has been verified by studying the effect of introducing  $\text{CH}_3$ - and  $\text{OCH}_3$ -groups into several derivatives of 1-(benzene-azo)-2-naphthol. It is assumed that the introduction of two  $\text{OCH}_3$ - or  $\text{OCH}_2\text{H}_5$ -groups will have a still stronger effect.

~~Card 1/2~~ There is 1 table, 1 graph and 3 Soviet references.

*Moscow Pedagogical Inst in V.P. Potemkin*

*Moscow Textile Inst*

5 (3)

5 (5)  
AUTHORS:

Izmail'skiy, V. A., Limanov, V. Ye.

507/62-59-8-34/42

TITLE:

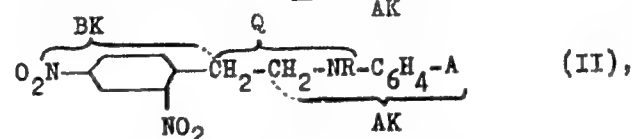
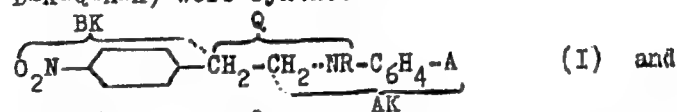
Synthesis and Reflection Spectra of the Derivatives of N-[ $\beta$ -(4-Nitrophenyl)-ethyl]-aniline and N-[ $\beta$ -(2,4-Dinitrophenyl)-ethyl]-aniline

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,  
1959, Nr 8, pp 1500-1504 (USSR)

**ABSTRACT:**

Compounds of the following kind (built according to the pattern B-K-Q-A-K) were synthesized:



where BK denotes the combined electrophilic chromophoric system, B the electrophilic chromophoric component; K the conjugated benzene system (A = the chromophoric component acting as an electron donor in the m or p position in relation to the

~~Card 1/3~~

 $\frac{1}{2}$

5(3)

AUTHORS:

Izmail'skiy, V. A., Limanov, V. Ye.

507/62-59-9-34/40

TITLE:

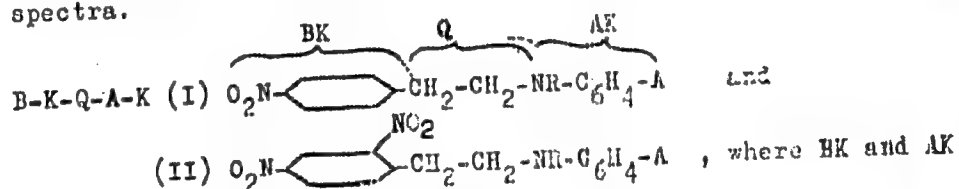
Absorption Spectra of Derivatives of N-[ $\beta$ -(4-Nitrophenyl)-ethyl]-aniline and N-[ $\beta$ -(2,4-Dinitrophenyl)-ethyl]-aniline

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 9, pp 1684-1688 (USSR)

ABSTRACT:

The absorption spectra of compounds having the structure given below are investigated. The behavior of these compounds and their chromophores in solution is then discussed on the basis of these spectra.



denote the connected electrophilic chromophores (B being the simple chromophore), K the conjugated chromophoric benzene system (A the electron donor group in p- or m-position to the NR-group),

Card 1/3

Absorption Spectra of Derivatives of  
N-[ $\beta$ -(4-Nitrophenyl)-ethyl]-aniline and N-[ $\beta$ -(2,4-Dinitrophenyl)-ethyl]-aniline

SOV/62-55-9-34/40

Q the group interrupting conjugation. Data of spectra obtained are given in a table. The absorption spectra of both types of compounds exhibit 4 peaks, the  $\gamma$  and  $\delta$  peaks corresponding to the components AK and BK. Shifts of the  $\alpha$  and  $\beta$  peaks are caused by interaction of the electron donor and electrophilic groups. In comparison to the total extinction of the components, peaks in the spectrum of the AKQBK-system are shifted to lower wave lengths. This shift is caused by an excess of one component. For type (I) this shift increased with increasing strength of the donor group introduced. The position of the donor group also had an effect on the extent of shift, this being larger in p- than in m-position. An increase in the electron donor properties of the complex had a bathochromic effect also. The same effect was also produced by replacing the NH-group by an alkyl group, which also caused a shift of the  $\alpha$  and  $\beta$  peaks to longer wave lengths. The effect was intensified by lengthening the Q-chain. A considerable shift was also produced by introducing a second nitro group. From these findings it is assumed, that in solution the molecules have the tendency to intermolecular interaction,

Card 2/3

5 (3)

AUTHORS:

Izmail'skiy, V. A., Dmitriyenko, S. V. S07/79-29-6-14/77

TITLE:

Exomolecular Reactions and Coloration (Ekzomolekulyarnyye reaktsii i tsvetnost'). VIII). Absorption Spectra of Molecular Complexes of 9-(p-Dimethyl-aminostyryl)-acridine with the Salts of 10-Alkyl-9-methylacridine (VIII. Spektiry pogloshcheniya molekulyarnykh kompleksov 9-(p-dimetilaminostiril)-akridina s solyami 10-alkil-9-metilakridiniya)

PERIODICAL:

Zhurnal obshchey khimii. 1959. Vol 29, Nr 6, pp 1842 - 1850 (USSR)

ABSTRACT:

The authors investigated the absorption spectra of the alcohol solutions of 9-(p-dimethyl-amino-styryl)-acridine (nucleophilic chromophore component AK) with the salts of the 10-ethyl- and 10-benzyl-9-methyl-acridine as well as of the 10-Et-9-styryl-acridinium (electrophilic chromophore component BK). The occurrence of the new absorption spectrum range with  $\lambda_{max}$  610 m $\mu$  is explained, as a consequence of the component reaction, by the formation of the nucleophilic complex. The maximum of the complex is very close to  $\lambda_{max}$  616 m $\mu$  of the corresponding dye with the conjugated chromophore system of the B-K-A type. The interpretation of this process by an occurring alcoholysis

Card 1/2

4(3)

307/72-29-B-57/81

AUTHORS: Izmail'skiy, V. A., Malygina, A. V.

TITLE: Counterpolarized Systems and Coloration. I. Spectra of Some 4-Nitro-benzanilide Derivatives Containing Some Electrodonor Chromophores in One Nucleus

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2623 - 2630 (USSR)

ABSTRACT: This paper represents a further development of the investigations carried out by V. I. Stavrovskaya (Refs 9,10). Two auxochromic groups in paraposition to each other form a counterpolarized system (AK) with an increased auxochromic behavior which causes an intensification of the color. In order to check the influence exerted by an addition of two donor groups in counterposition upon the reflection and absorption spectra, the 4-nitro-benzoyl arylamides of structure (I), which contain the donor groups  $\text{CH}_3$ ,  $\text{OCH}_3$ ,  $\text{OC}_2\text{H}_5$  to be integrated in the anilide nucleus in positions 2 and 5, were investigated. The introduction of two  $\text{CH}_3$ -groups exerts little effect, whereas the addition of a second donor

Card 1/3

Counterpolarized Systems and Coloration. I. Spectra of Some SOV/79-29-a-37/81  
4-Nitro-benzanilide Derivatives Containing Some Electrodonor Chromophores in  
One Nucleus

5-CH<sub>3</sub>-, and especially 5-OCH<sub>3</sub>-group, to the methoxy derivative causes an intensive bathochromic shift in the reflection spectrum as well as in the absorption spectrum in the long-wave range. In the case of 4'-nitro-dimethoxy benzanilide, a well-pronounced step is formed which indicates the occurrence of band (II) of the absorption range. A comparison of the spectrum of the 2,5-dimethoxy derivative (Nr 5) with the absorption spectra of the 4-nitrobenzoyl anilides with a second donor group (OCH<sub>3</sub>, OH, NHMe<sub>2</sub>) in paraposition with respect to the NH-group, indicates that the effect of the 2,5-dimethoxy-double-nucleophilic system((1-CONH, 2,5-(OCH<sub>3</sub>)<sub>2</sub>)) is closely related with the effect of the 4-methoxy group ((1-CONH, 4-OCH<sub>3</sub>)). In the presence of the 4-benzamino group, the influence of two groups upon the coloration in the solid phase is also very well pronounced, and leads to an intensification of the color, from bright yellow to bright orange, in the order 2-OCH<sub>3</sub> < 5-CH<sub>3</sub> < 2,5-(OCH<sub>3</sub>)<sub>2</sub> < 2,5-(OC<sub>2</sub>H<sub>5</sub>)<sub>2</sub>. The spectrum in the solution is determined by the reaction of the systems

Card 2/3

SSR, 77-27-8-77/81

5(3), 5(4)  
AUTHORS:

Izmail'skiy, V. A., Liliandov, V. Ye.

TITLE:

Counterpolarized Systems and Coloration. II. Reflection Spectra of the Derivatives of N- $[\beta$ -(4-Nitrophenyl)-ethyl]-aniline, with Para- and Meta-position of the Donor Chromophore.

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, p. 2631-2638 (USSR)

ABSTRACT:

This paper continues the investigations initiated by Z. M. Baramov (Ref 4) which were carried on by V. I. Slavovskaya, T. Smirnov, and P. I. Samokish on various special compounds (Ref. 2,5,6,7,8). The authors synthesized a number of derivatives of N- $[\beta$ -(4-nitrophenyl)-ethyl]-aniline of the general formula (I), where A is one of the donor groups  $\text{CH}_3$ ,  $\text{OCH}_3$ ,  $\text{OH}$ ,  $\text{NHCOOCH}_3$ ,  $\text{NH}_2$  in the para- or meta-position with respect to the  $\text{NH}$ -group. All compounds synthesized were colored, irrespective of the position of two  $\text{CH}_2$ -groups in general, which interrupts the conjugation, thus excluding the possibility of a rigid conjugated chain; the coloration of the most intensely colored compound, with the p- $\text{NH}_2$ -group, reaches a dark red. The rules governing the variations in the coloration of the compounds, which were visually

Card 1/3

Counter polarized Systems and Coloration. II. Reflection Spectra of the Derivatives of N-[ $\beta$ -(4-Nitrophenyl)-ethyl]-aniline, with Para- and Meta-position of the Donor Chromophore

detected, were defined more exactly by the reflection spectra obtained for the primary products. The fundamental cause of the coloration of the compounds in the solid phase must be the in the direct action of the donor group (AK) of the complex systems by means of exomolecular forces, i.e. of the forces which cause the formation of complex compounds of the nitro-compounds with aromatic amines and phenols. The introduction of a donor group into the para-position was found to intensify the coloration to a greater extent than its introduction into the meta-position: the para double-donor counterpolarized system is more nucleophilic than the meta-double-donor symmetrical system. As to the para-compounds, the intensification of coloration proceeds normally according to the intensity of the electrodonor chromophore. An exception is the unexpectedly intense coloration of the para-oxy-derivative. The OH-group exerted a strong effect also in the meta-position. In the compounds of the meta-series, small deviations from the nature of the effect in the para-position

Chem. 4/1

Counterpolarized Systems and Coloration. II. Reflection. SOV/79-29-5-58/51  
Spectra of the Derivatives of N-[ $\beta$ -(4-Nitrophenyl)-ethyl]-aniline, With Para-  
and Meta-position of the Donor Chromophores

were observed. The effect of the m-NH<sub>2</sub>-group is especially weak,  
as was not to be expected. There are 6 figures, 1 table, and 14  
references, 11 of which are Soviet.

ASSOCIATION: Moskovskiy pedagogicheskii institut imeni Potemkina (Moscow Pe-  
dagogical Institute imeni Potemkin)

SUBMITTED: July 21, 1958

Card 3/3

5(3)

AUTHORS: Izmail'skiy, V. A., Limanov, V. Ye. SOV/79-29-9-25/76

TITLE: Counterpolarized Systems and Coloration.  
III. The Effect of the Substitution of the  $\text{CH}_2\text{CH}_2\text{NH}$ -Group  
for the  $\text{CH}_2\text{NH}$ -Group and of the Methylation of NH in the  
Compounds of the Structure  $\text{p}'\text{-O}_2\text{NC}_6\text{H}_4(\text{CH}_2)_n\text{NHC}_6\text{H}_4\text{A-p}$

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 2927-2936  
(USSR)

ABSTRACT: In order to examine the conclusion of the previous paper  
(Ref 1) saying that the intensification of color in a com-  
pound in solid phase is to be regarded as a result of the  
formation of the doubly nucleophilic, counterpolarized system  
with intensified nucleophilic character, in the introduction  
of a second nucleophilic chromophore component A ( $\text{A} = \text{CH}_3$ ,  
 $\text{OCH}_3$ ,  $\text{OH}$ ,  $\text{NHCOCH}_3$ ,  $\text{NH}_2$  in para- or meta-position to the NH-group)  
(I and II) into the para-position to the first nucleophilic  
chromophore component, the authors synthesized the N-methyl  
derivatives of N-(4-nitro benzyl)- and N-[ $\beta$ -(4-nitro phenyl)-  
ethyl]-aniline [See formulas (I) and (II)]. The intensification

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Counterpolarized Systems and Coloration.

SOV/79-29-9-25/76

III. The Effect of the Substitution of the  $\text{CH}_2\text{CH}_2\text{NH}$ -Group for the  $\text{CH}_2\text{NH}$ -Group and of the Methylation of NH in the Compounds of the Structure  $\text{p}'\text{-O}_2\text{NC}_6\text{H}_4(\text{CH}_2)_n\text{NHC}_6\text{H}_4\text{A-p}$

of the nucleophilic character by a change in the structure of the connecting group A, i.e. by introducing the second alkyl into the NH-group  $[\text{CH}_2\text{NH} \longrightarrow \text{CH}_2\text{NCH}_3 \text{ and } \text{CH}_2\text{CH}_2\text{NH} \longrightarrow \text{CH}_2\text{CH}_2\text{NCH}_3]$ , or by prolonging of the chain of the N-alkyl group  $[\text{CH}_2\text{NH} \longrightarrow \text{CH}_2\text{CH}_2\text{NH} \text{ and } \text{CH}_2\text{NCH}_3 \longrightarrow \text{CH}_2\text{CH}_2\text{NCH}_3]$  does in fact cause bathochromic shifts of the curve of the absorption spectrum of the dye powder surface in the compound in solid state; these shifts are similar to that of the curve when the second nucleophilic group A is introduced into para-position; the order is the following:  
 $\text{CH}_2\text{NHC}_6\text{H}_5 < \text{CH}_2\text{CH}_2\text{NHC}_6\text{H}_5 < \text{CH}_2\text{N}(\text{CH}_3)\text{C}_6\text{H}_5 < \text{CH}_2\text{CH}_2\text{N}(\text{CH}_3)\text{C}_6\text{H}_5 <$   
 $< \text{CH}_2\text{NHC}_6\text{H}_4\text{OCH}_3 \text{ -p- } < \text{CH}_2\text{CH}_2\text{NHC}_6\text{H}_4\text{OCH}_3 \text{ -p- } <$   
 $< \text{CH}_2\text{CH}_2\text{N}(\text{CH}_3)\text{C}_6\text{H}_4\text{OCH}_3 \text{ -p .}$

Card 2/3

Counterpolarized Systems and Coloration.

SOV/79-29-9-25/76

III. The Effect of the Substitution of the  $\text{CH}_2\text{CH}_2\text{NH}$ -Group

for the  $\text{CH}_2\text{NH}$ -Group and of the Methylation of NH in the

Compounds of the Structure  $\text{p}'\text{-O}_2\text{NC}_6\text{H}_4(\text{CH}_2)_n\text{NHC}_6\text{H}_4\text{A-p}$

When  $\text{A} = \text{p-OCH}_3$ , the bathochromic shifts are more intensive than when  $\text{A} = \text{H}$ . The coloring of the compounds (I) in solid crystalline phase (in powder) and of the similar derivatives of N-4-nitro benzyl aniline is caused by exomolecular interaction of the antipolar, cochromophoric systems under the formation of a complex meso-system (complex mesomerism). There are 2 figures, 1 table, and 19 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy pedagogicheskiy institut, Laboratoriya khimii krasiteley i problemy tsvetnosti (Moscow Pedagogical Institute, Laboratory of the Chemistry of Dyes and the Problem of Coloration)

SUBMITTED: August 18, 1958

Card 3/3

5.3610  
5.3100

~~5(3), 5(4)~~  
AUTHORS:

Izmail'skiy, V. A., Nuridzhanyan, K. A.

SOY/20-129-5-25/64

TITLE:

Absorption Spectra of the Derivatives of 4-NO<sub>2</sub>-Diphenyl Amine.  
On the Role of NH as Insulator of Optical Conjugation in the  
Diphenyl Amine Derivatives

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5,  
pp 1053 - 1056 (USSR)

ABSTRACT:

In the compounds of 2,4-dinitro derivatives of diphenyl amine<sup>1</sup>  
(DPhA), unlike the stilbene derivatives, there is no conju-  
gation to unite both rings to a unitary Ko-chromophore system  
(Refs 1-3). In fact, the DPhA-derivatives contain NO<sub>2</sub>-groups  
and a donor chromophore component A<sup>2</sup> = OCH<sub>3</sub>, NH<sub>2</sub>, NMe<sub>2</sub> in  
different rings. The two p-electrons of the NH-group in the  
DPhA are not equivalent to the two π-electrons of the CH-CH-  
group in stilbenes. The coloration of the said compounds is  
determined by the system (NO<sub>2</sub>)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>NH- which represents the  
"fundamental chromophore system" of the BKA-type. Therein NH  
is the first donor group. Group A<sup>2</sup> is the 2nd donor group

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Absorption Spectra of the Derivatives of  
 4-NO<sub>2</sub>-Diphenyl Amine. On the Role of NH as Insulator of Optical Conjugation  
 in the Diphenyl Amine Derivatives

67016

SOV/20-129-5-25/64

and its derivatives, Refs 3,4) a unitary  $\pi$ -electron system with a unitary excitation vector is missing along the  $\pi$ -system, they investigated the spectra of the DPhA-derivatives (V) (Table 1). The introduction of donors (V) ( $A^2 = OCH_3, NH_2$ ) causes but a slight bathochrome dislocation of the band  $x^I_3$  (Fig 1). In the case (V) ( $A^2 = NMe_2$ , Nr 5, Table 1) the entire band was shifted with respect to  $O_2NPhNet_2$  both from the bathochrome and the hyperchrome aspect (Fig 2). The above-mentioned conclusions reached by the authors (Ref 2) were confirmed by the present investigation. Corresponding to (V) two separate systems BKA and  $A^1KA^2$  are present with their own rules of transition into the excited states. These systems "crossing" at the central N-atom thus prove to be bound to one another and in a sense, to be interdependent. The conclusions drawn on conjugation on the basis of the chemical reactivity cannot be regarded

Card 3/4

Academy of Sciences USSR

PHASE I BOOK EXPLORATION 307/2186

Stroynlye veshchiva i spektroskopiya (Structure of Matter and Spectroscopy) Moscow, Izd-vo AN SSSR, 1969. 113 p. Kireta ellp inserted. 2,300 copies printed.

Ed. E. V. Arshinov, Professor, Tech. Ed. T. P. Polonova.

FOREWORD: This collection of articles is intended for physicists and chemists interested in spectroscopic methods of research on the structure of molecules and related problems.

CONTENTS: The articles contained in this collection were taken from the editorial files of the Zhurnal Fizicheskoy Khimii (Journal of Physical Chemistry) and are concerned with spectroscopic methods in research on the structure of molecules, the hydrogen bond, isotope effects, problems of intermolecular interaction, the structure of aqueous solutions of electrolytes, and related complex compounds. References are given to individual articles.

PROLOGUE: V. M. and N. D. Orlovskaya. Features of Spectroscopic Investigation of Hydrogen Bond in D-Nitrobenzidine Molecules. The authors thank Ya. S. Bobovich and V. S. Neporent for their interest.

Shchegolev, Ya. V., and Ya. M. Ieremienko. Zhurnal Fizicheskoy Khimii Institut im. S. Ordzhonikidze (Chemical Pharmaceutical Institute im. S. Ordzhonikidze). Tautomerism of Certain Derivative Heterocyclic Compounds. XI. The Deuterio-Effect at Tautomeric Equilibrium and Spectra of N-Deuterio-Substituted Heterocyclic Alkaloids 28

Shchegolev, D. M., M. M. Sazajkin, M. N. Kuznetsov, and T. S. Yermakova. Zhurnal Fizicheskoy Khimii Institut im. S. Ordzhonikidze (Chemical Pharmaceutical Institute im. S. Ordzhonikidze). Tautomerism of Certain Derivative Heterocyclic Compounds. XII. The Deuterio-Effect at Tautomeric Equilibrium and Spectra of N-Deuterio-Substituted Heterocyclic Alkaloids 28

Shchegolev, D. M., and V. S. Iltisov. Zhurnal Fizicheskoy Khimii Institut im. S. Ordzhonikidze (Chemical Pharmaceutical Institute im. S. Ordzhonikidze). Tautomerism of Certain Derivative Heterocyclic Compounds. XIII. The Deuterio-Effect at Tautomeric Equilibrium and Spectra of N-Deuterio-Substituted Heterocyclic Alkaloids 28

Shchegolev, D. M., and V. S. Iltisov. Zhurnal Fizicheskoy Khimii Institut im. S. Ordzhonikidze (Chemical Pharmaceutical Institute im. S. Ordzhonikidze). Tautomerism of Certain Derivative Heterocyclic Compounds. XIV. The Deuterio-Effect at Tautomeric Equilibrium and Spectra of N-Deuterio-Substituted Heterocyclic Alkaloids 28

NURIDZHANYAN, K.A.; IZMAIL'SKIY, V.A.

Alkyl derivatives of 4-nitrodiphenylamine. Zhur. VIKHO 5  
no. 2:237-238 '60. (MIRA 14:2)

1. Moskovskiy pedagogicheskiy institut imeni V.P. Potemkina.  
(Diphenylamine)

S/063/60/005/003/007/011/XX  
A051/A029

AUTHORS: Kitrosskiy, N.A., Izmail'skiy, V.A.

TITLE: Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

PERIODICAL: Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva im. D.I. Mendeleeva, 1960, Vol. 5, No. 3, pp. 347-349

TEXT: It was stated (Ref. 1) that the long-wave maximum of molecular complexes of the  $\sqrt{BK + AK}$  type, where BK is the complex electrophilic chromophore (B is the electrophilic chromophore, e.g.,  $\text{NO}_2$ ,  $\text{C} = \text{N}^+$ ) and AK is the complex electron-donor chromophore (A is the electron-donor chromophore, e.g.,  $\text{NMe}_2$ , K is a conjugated system, e.g., a benzene nucleus), may be quite close to the maximum of the corresponding compound with a conjugated structure of the cochromophore B-K-A(II), in which the systems BK and AK are superimposed (III). For  $\lambda_{\text{max}}$ , it may even be shifted bathochromically.

Card 1/11

S/063/60/005/003/007/011/XI  
A051/A029

# Extramolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

The shift of the absorption boundary clearly points to the noticeable formation of a complex under these conditions. In increasing the molar ratio to  $1AK_1:150 BK$  (No. 4, Table 1, Fig. 1) the formation of the complex (IV) is observed in a new band ( $\lambda_{max} = 415 m\mu$ ), lying in the same region as  $\lambda_{max}$  of the corresponding compound of the  $BKA(V)$  type, viz.,  $443 m\mu$  (although shifted hypsochromically). With a further increase in the excess of the component  $BK(1AK_1:100BK)$  for the solution No. 5  $\alpha$ -naphthalamine in nitrobenzene the intensity of the complex band increases up to  $\epsilon = 1,620$ . However,  $\lambda_{max}$  ( $403 m\mu$ ) is shifted hypsochromically ( $\Delta\lambda = -12$ ) as compared to No. 4  $\lambda_{max}$  (Fig. 1), which calls for an explanation. Similar phenomena were noted for solutions of  $\beta$ -naphthalamine ( $AK_2$ ) with nitrobenzene ( $BK$ ) (VI). For the solutions  $1AK_2:10BK$  and  $1AK_2:50BK$  a slight bathochromic shift was noted of the  $\lambda$  of the absorption boundary: No. 7  $372 m\mu$ , No. 8  $388 m\mu$ , No. 9  $383 m\mu$  (Nos. 8, 9, Table 1, Fig. 2). However, at  $1AK_2:150BK$   $\lambda_{max} = 414 m\mu$  occurs, and for the solution No. 10 in  $C_6H_5NO_2$   $\lambda_{max} = 418 m\mu$ .

Card 3/11

S/063/60/005/003/007/011/XX  
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular  
Complexes of Naphthalamines With Nitrobenzene

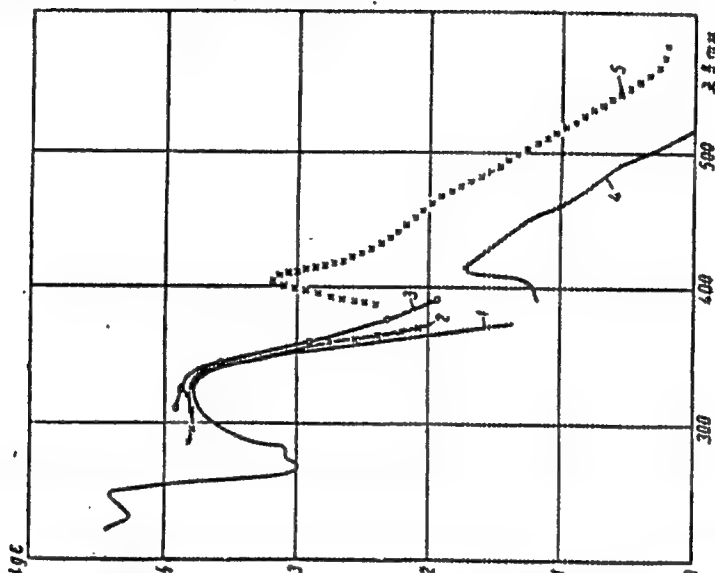
ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State  
University)

SUBMITTED: December 7, 1959

Card 5/11

S/063/60/005/003/007/011/XX  
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular  
Complexes of Naphthalamines With Nitrobenzene



Card 6/11

S/063/60/005/001/005/011/XX  
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

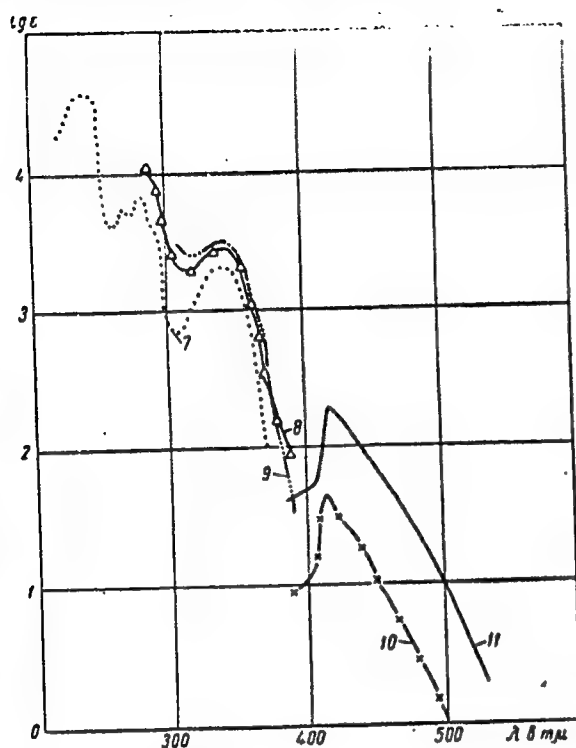


Figure 2

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✓

3/063/60/005/003/XX/011/XX  
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular  
Complexes of Naphthalamines With Nitrobenzene

Table 2: Values of  $\lambda_{\max}$  and  $\epsilon_{\max}$  for solutions of naphthalamines  
and aniline with nitrobenzene ( $c = 10^{-2}$  mole/l)

Structure of the amine Solutions	$-C_{10}H_7NH_2$		$-C_{10}H_7NH_2$		$C_6H_5NH_2$	
	$\lambda_{\max}$	$\epsilon_{\max}$	$\lambda_{\max}$	$\epsilon_{\max}$	$\lambda_{\max}$	$\epsilon_{\max}$
1AK:150BK	415*	56	414*	42	430***	7
1AK: BK	403**	1620	418**	208	430**	54
B-K-A	(V)443	15140	(IV)420	5370	375***	15450

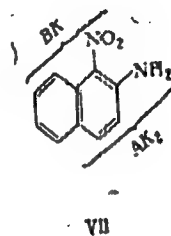
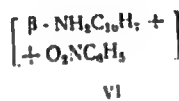
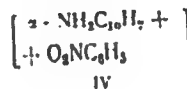
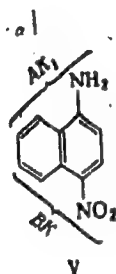
\* in  $\Delta X \Delta$  (DKnE); \*\* in  $C_6H_5NO_2$ ; \*\*\* in ethanol.

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S/063/60/003/003/007/011/XL  
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular  
Complexes of Naphthalamines With Nitrobenzene

Structural formula 2



Card 11/11

IZMAIL'SKIY, V.A.; VISHNEVSKIY, L.D.

Absorption spectra of solutions of acridine salts with diphenylamine.  
Zhur. VKHO 5 no.6:705-706 '60. (MIRA 13:12)

1. Moskovskiy pedagogicheskiy institut im. V.I. Lenina.  
(Acridine--Spectra)  
(Diphenylamine--Spectra)

U. S. S. R.

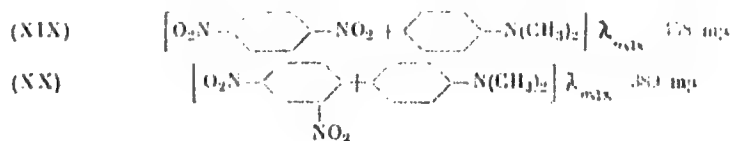
11993  
367/12-12-8-9/10

AUTHORS: Ismail'skiy, V. A., Belotsvetov, A. V.

TITLE: Counterpolarized Systems and Chromaticity. V. Absorption Spectra of m- and p Dinitrobenzenes and of their Molecular Complexes With Dimethylaniline. (Concerning Analysis of Structural Influences upon the Spectrum. II)

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 392-402 (USSR)

ABSTRACT: The authors studied the effect of the relative position of two electrophilic chromophores (O<sub>2</sub>N-radicals upon the absorption spectra of para- and meta-dinitrobenzene alone and in the presence of dimethylaniline, with which it forms molecular complexes (XIX and XX).



Chem 1/

to nitro-substituted Systems and  
Sensitivity. V.

(1948)  
SOV/77-20-1-1/77

Absorption spectra of dinitrobenzenes are shown in Fig. 4, while Fig. 5 represents absorption spectra of dinitrobenzene complexes (with dimethylaniline). It can be seen that the spectrum of p-dinitrobenzene is shifted toward the long wave lengths as compared with the meta-isomer. The bathochromic shift is even more pronounced for the molecular complex ( $m-(O_2N)_2C_6H_4 + 2C_6H_5NMe_2$ ).

Thus, the rule of Kaufmann (H. Kaufmann, Ber., 49, 2722 (1906), 44, 2386 (1911), 52, 1422 (1919)) concerning the bathochromic shift in the system with two electron-donor groups in para-position, as compared to the meta-isomer, can be applied to the systems with electrophilic groups. The bathochromic effect is explained by the authors as due to electronic displacements which take place in the para-isomer upon exposure to light and cause xx molecular deformations and a shift to a pseudoradical system (XXII below) with subsequent increase in electrophilic properties.

1948

Counterpolarized Systems and  
Chromaticity. V.

17358  
SOV/79-30-2-9/78

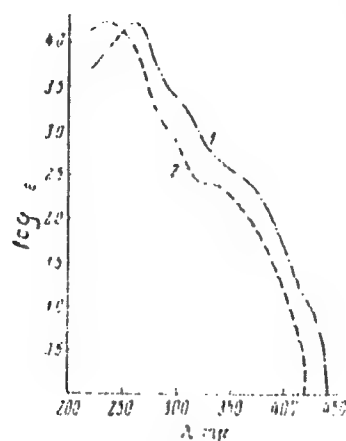


Fig. 2. Absorption spectra in alcohol.  
(1) p-dinitrobenzene; (2) m-dinitrobenzene.

Card 3/6

Counterpolarized Systems and  
Chromaticity. V.

7755b  
SOV/10-30-2-9/7d

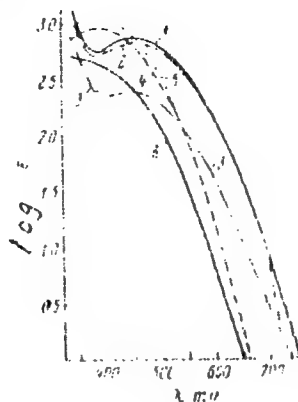


Fig. 3. Absorption spectra. (1) p-dinitrobenzene in dimethylaniline, conc. of dinitrobenzene  $5 \cdot 10^{-2}M$ ; (2) the same, conc.  $10^{-2}M$ ; (3) p-dinitrobenzene in 20% solution of dimethylaniline in alcohol. (Caption cont. on Card )

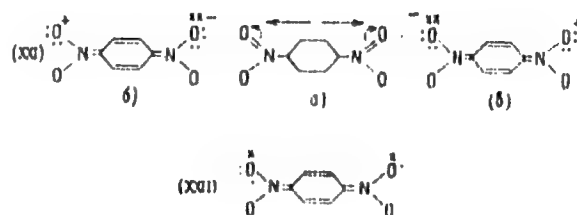
Card 4/6

Counterpolarized Systems and  
Chromaticity. V.

17000  
507/79-10-2-5/78

(Caption con't.)

alcohol, conc.  $10^{-2}$ M; (4) m-dinitrobenzene in dimethyl-  
aniline, conc.  $5 \cdot 10^{-2}$ M; (5) the same, conc.  $10^{-2}$ M;  
(6) m-dinitrobenzene in 20% solution of dimethylaniline  
in alcohol, conc.  $10^{-2}$ M.



End 5/6

1. Interpolarized Systems and  
Chromaticity. V.

7 (75)  
SOV/11-30-2-9/78

There are 3 figures; 2 tables; and 51 references, 15 Soviet, 4 German, 1 French, 2 U.K., 9 U.S. The 5 most recent U.K. and U.S. references are: H. Lubs., Chem. of Synthetic Dyes and Pigments, N.Y., CVO (1955); H. Gilman., Organic Chemistry, Vol III, 165 (1953); G. W. Wheeland, Resonance in Organic Chemistry, N. Y., 283 (1955); L. Doub, J. Vandenberg, J. Am. Chem. Soc., 71, 2414 (1949); P. Fielding, J. Le Fevre, J. Chem. Soc., 1950, 2812.

ASSOCIATION: Moscow V. P. Potemkin Pedagogical Institute (Moskovskiy pedagogicheskiy institut imeni V. P. Potemkina)  
SUBMITTED: February 4, 1959

Card 6/6

S/020/60/132/03/30/066  
B011/B008

AUTHORS: Kitrosskiy, N. A., Izmail'skiy, V. A.

TITLE: Absorption Spectra of the Solutions of Dimethyl-amino-styryl Derivatives of Acridine in Nitrobenzene

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3, pp. 598-601

TEXT: The authors wanted to check the assumptions that the dimethyl-amino-styryl derivatives of the acridine and quinoline form colored complexes with nitro-benzene. For this purpose they studied the spectra of the molecular complexes which develop at the dissipation of the components  $AK_1-AK_5$  (I-V). They are anhydro bases of the acridine derivatives (Table 1). Nitro-benzene (BK) was used in great excess as a solvent in order to shift the equilibrium  $AK + BK \rightleftharpoons [AK \wedge BK]$  in the direction of the complex. The interaction of the above mentioned AK-compounds with  $C_6H_5NO_2$  (BK) led in all cases to a bathochromic shift of the curve of the anhydro base. The authors explain this by the

Card 1/4

Absorption Spectra of the Solutions of  
Dimethyl-amino-styryl Derivatives of  
Acridine in Nitrobenzene

S/020/60/132/03/30/066  
B011/B008

formation of a complex in the solution. They succeeded in making a determination which they consider to be very important: a new band appeared in the spectrum at the formation of the complex of  $C_6H_5NO_2$  with 9-(p-dimethyl-amino-styryl)-acridine ( $AK_1$ , I) (2, Fig. 1) or with 9-(p-dimethyl-amino-styryl)-3,4-benzacridine ( $AK_4$ , IV) (11, Fig. 2). Its shape and the maximum range are surprisingly similar to the long-wave band and the  $\lambda_{max}$  of corresponding dyes (3, Fig. 1 and 12, Fig. 2). The latter dyes develop by addition of HCl and of RX to the anhydro base and from the corresponding complex of the mentioned AK with the acridine component BK (Refs. 2-4). It follows therefrom that  $C_6H_5NO_2$  appears in the complex as a sort of aprotic acid. The authors see the more probable explanation of the mentioned similarity of the curves and the absorption ranges in the following: the transmission of the charge at the excitation by light does not occur between the components which form the complex (Ref. 7), but within one of the components, in this case the AK. It obtains a partial charge ( $\delta^+$ ) (Ref. 8) owing to a complex conjugation ("Complex-Mesomerism" Refs. 9,10). The systems  $AK_1$  and  $AK_4$  in the mentioned complexes thus play the role of the

Card 2/4

Absorption Spectra of the Solutions of  
Dimethyl-amino-styryl Derivatives of  
Acridine in Nitrobenzene

S/020/60/132/03/30/066  
B011/B008

the formation of halochromic products with the AK-component. The authors mention A. I. Kipriyanov. There are 3 figures, 1 table, and 18 references, 14 of which are Soviet. ✓

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. V. P. Potemkina  
(Moscow Pedagogical Institute imeni V. P. Potemkin)

PRESENTED: January 21, 1960, by B. A. Kazanskiy, Academician

SUBMITTED: January 20, 1960

Card 4/4

LIMANOV, V.Ye.; KOSTROVA, N.D.; MOSEKOVSKIY, Yu.Sh.; IZMAIL'SKIY, V.A.

Hydrogen bond and configuration of molecules p- and m-E-[ $\beta$ -  
(4-hydrophenyl)-ethyl]-aminophenol. Izv.vys.ucheb.zav; khim.  
i khim.tekh. 4 no.5:867-868 '61. (MIRA 14:11)

1. Institut khimicheskoy fiziki AN SSSR i Moskovskiy gosudarstvennyy  
pedagogicheskiy institut imeni Lenina.  
(Phenol—Spectra) (Hydrogen bonding)

IZMAIL'SKIY, V.A.; GLUSHENKOV, V.A.

Spectra of 4-nitrodiphenylmethane derivatives. Zhur. VKHO 6  
no.1:111-112 '61. (MIRA 14:3)

1. Moskovskiy pedagogicheskiy institut im. V.I.Lenina.  
(Methane—Spectra)

IZMAIL'SKIY, V.A.; MOSTOSLAVSKIY, M.A.

Absorption spectra of 3-oxo-2,3-dihydrothionaphthene and its derivatives. Part 2: Isomerism of 2-benzylidene-3-oxo-2,3-dihydrothionaphthene. Ukr. khim. zhur. 27 no.2:234-237 '61. (MIRA 14:3)

1. Rubezhan'skiy filial Nauchno-issledovatel'skogo instituta organicheskikh poluproduktov i krasiteley i Moskovskiy pedagogicheskii institut im. V. P. Potemkina.  
(Thianaphthenone—Spectra)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.

Absorption spectra of 3-keto-2,3-dihydrothionaphthene and its derivatives. Part 3. Zhur. ob. khim. 31 no.1:17-28 Ja '61.

(MIRA 14:1)

1. Moskovskiy pedagogicheskiy institut imeni V.I.Lenina i Rubezhanskiy filial nauchno-issledovatel'skogo instituta organicheskikh poluproduktov i krasiteley.

(Thianaphthenone--Spectra)

IZMAIL'SKIY, V.A.; GLUSHENKOV, V.A.

Absorption spectra of diphenylmethane and diphenylethane derivatives containing nitro and amino groups in the different rings.  
Dokl. AN SSSR 139 no.2:373-376 J1 '61. (MIRA 14:7)

1. Laboratoriya khimii krasiteley i problemy tsvetnosti pri Moskovskom gosudarstvennom pedagogicheskom institute im. V.I. Lenina.  
Predstavleno akademikom B.A. Kazanskim.  
(Methane--Spectra) (Ethane--Spectra)

IZMAIL'SKIY, V.A.; MOSTOSLAVSKIY, M.A.

Measurement of spectra in mixed alkane-based solvents as a  
method of studying interaction between solute and solvent. Dokl.  
AN SSSR 139 no.3:601-604 J1 '61. (MIRA 14:7)

1. Laboratoriya krasiteley i problemy tsvetnosti pri Moskovskom  
pedagogicheskom institute im. V.I. Lenina i Rubezhanskiy filial  
Nauchno-issledovatel'skogo instituta poluproduktov i krasiteley.  
Predstavleno akademikom B.A. Kazanskim.  
(Solvents--Spectra)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.; SHAPKINA, M.M.

Effect of solvents on the process of photochemical and thermal  
cis-trans-isomerization of perinaphththioindigo. Zhur.VKHO 7  
no.1:108-109 '62. (MIRA 15:3)

1. Laboratoriya krasiteley i problemy tsvetnosti pri Moskovskom  
pedagogicheskom institute imeni V.I.Lenina i Kubezhanskiy  
filial Gosudarstvennogo nauchno-issledovatel'skogo instituta  
organicheskikh poluproduktov i krasiteley.  
(Indigo) (Isomerization) (Solvents)

MSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.; SHEVCHUK, I.N.

Nature of phototropic variations of absorption spectra of  
thioindogenides. Zhur.ob.khim. 32 no.2:660 F '62. (MIRA 15:2)  
(Benzothiophene--Spectra)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.; SHAPKINA, M.M.

Absorption spectra of 3-keto-2,3-dihydrothionaphthene and its derivatives. Part 4: Effect of solvents on the value of the solvatochromic shift of the absorption maximum. Zhur.ob.khim. 32 no.6:1746-1755 Je '62. (MIRA 15:6)

1. Laboratoriya khimii krasiteley i problemy tsvetnosti pri Moskovskom pedagogicheskom institute im. Lenina. Rubezhanskiy filial instituta organicheskikh poluproduktov i krasiteley.

(Benzothiophene--Spectra) (Solvents)

MILLIARES, Ye.Ye.; IZMAIL'SKIY, V.A.

p-Dimethylaminobenzene salts with trifluoroacetic acid  
in dichloroethane. Zhur.ob.khim. 32 no.10:3451-3452  
0 '62. (MIRA 15:11)

(Aniline) (Acetic acid)

GLUSHENKOV, V.A.; IZMAIL'SKIY, V.A. ---

Excimer interaction band in the spectra of diphenylalkane salts  
with NO<sub>2</sub> and OH in different nuclei. Dokl. AN SSSR 142 no.4:820.  
823 F '62. (MIRA 15:2)

1. Laboratoriya khimii krasiteley i problemy tsvetnosti  
pri Moskovskom pedagogicheskom institute im. V.I. Lenina.  
Predstavleno akademikom B.A. Kazanskim.  
(Paraffins---Spectra)

KOSTOSLAVSKIY, M.A.; IZMAILOVSKIY, V.A.

Proportional sensitivity of merocyanine absorption spectra to the action of solvents. Dokl. AN SSSR 142 no.3:600-603 Ja '62. (MIRA 15:1)

1. Kubezhanskiy filial Nauchno-issledovatel'skogo Instituta polupro-  
duktov i krasiteley i Laboratoriya khimii krasiteley i problemy  
tsvetnosti pri Moskovskom pedagogicheskom institute im. V.I.Lenina.  
Predstavleno akademikom B.A.hazanskim.  
(Merocyanines--Spectra)

MILLIARES, Ye.Ye.; IZMAIL'SKIY, V.A.

Spectra of the derivatives of 2,4-dinitroanilins. Presence of  
quasiautonomous cochromophore systems. Dokl. AN SSSR 146 no.5:1094-1097  
(MIRA 15:10)  
O '62.

1. Laborayotiya khimii krasiteley i problemy tsvetnosti pri  
Moskovskom pedagogicheskom institut im. Lenina i Institut  
organicheskikh poluprovodnikov i krasiteley. Predstavleno  
akademikom B.A. Kasenkam.  
(Aniline—Spectra)

MILLIARESI, Y<sub>o</sub>. Y<sub>o</sub>.; IZMAIL'SKIY, V. A.; LARINA, M. K.

Effect of N-methylation on the spectrum of derivatives of  
2,4-dinitrodiphenylamine. Zhur. VKHO 8 no.2:238-239 '63.  
(MIRA 16:4)

1. Moskovskiy pedagogicheskiy institut imeni V. I. Lenina.

(Diphenylamine—Spectra) (Methylation)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.

Absorption spectra of 3-keto-2,3-dihydroxythionaphthene and its derivatives. Part 5: Effect of ortho-substituents on absorption spectra and photostability of substituted 2-benzylidene-3-keto-2,3-dihydroxythionaphthene. Zhur.ob.khim. 33 no.3:739-744 Mr '63. (MIRA 16:3)

1. Laboratoriya krasiteley i problemy tsvetnosti pri Moskovskom pedagogicheskom institute imeni V.I. Lenina i Rubezhanskiy filial nauchno-issledovatel'skogo instituta poluproduktov i krasiteley.

(Benzothioophene—Absorption spectra)  
(Substitution (Chemistry))

GLUSHENKOV, V.A.; IZMAIL'SKIY, V.A.; MOSHKOVSKIY, Yu.Sh.

Spectra of the electron donor-acceptor complexes of 4-nitrodiphenyl alkanes containing a donor group in the other nucleus. Electron paramagnetic resonance effect. Dokl. AN SSSR 153 no.6:1363-1366 D '63. (MIRA 17:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley, Institut khimicheskoy fiziki AN SSSR i Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V.I. Lenina. Prestavleno akademikom A.N. Tereninym.

IZMAIL'SKIY, V.A.; FEDOROV, Yu.A.

Effect of substitution of the benzene ring with a naphthalene ring  
in compounds having individual chromophoric systems. Zhur. VKHO 9  
no. 3:359-360 '64. (MIRA 17:9)

1. Laboratoriya krasiteley i problemy tsvetnosti pri Moskovskom  
gosudarstvennom pedagogicheskom institute imeni Lenina.

IZMAIL'SKIY, V.A.; FEDUROV, Yu.A.

Spectrum genetics of the derivatives of benzylideneaniline and  
benzylidene-1-naphthylamine containing  $\text{NO}_2^-$  and  $\text{NMe}_2$  groups.  
Dokl. AN SSSR 158 no.4:900-903 O '64.

(MIRA 17:11)

1. Laboratoriya khimii krasiteley i problemy tsvetnosti pri  
Moskovskom gosudarstvennom pedagogicheskom institute im. V.I.  
Lenina.

IZMAIL'SKIY, V.A.; MALYGINA, A.V.

Contrapolarized systems and spectrum. Part 7: Effect of additional electron-donor groups in a second ring on the spectrum of p-dimethylaminoazobenzene. Zhur. ob. khim. 34 no.11:3554-3561 N '64 (MIRA 18:1)

1. Laboratoriya krasiteley i problemy tsvetnosti pri Moskovskom pedagogicheskome institute imeni V.I. Lenina i Moskovskiy tekstil'nyy institut.

MAKAROV, V.A.; PRINCE, V.L.

Effect of benzene nucleus substitution on the properties of  
anthracene dyes. 1. Absorption spectra of mono- and dinitrophenyl-  
ethyl. Alpha-methylstyrene. Zhur. ob. khim. 34 no. 12:1876-  
387; D 162 (1962) (N.R. 1811)

IZMAIL'SKIY, V.A.; FEDOROV, Yu.A.

Spectra of benzylideneanilins, its derivatives and their salts. Zhur. fiz.  
khim. 39 no.3:768-771 Mr '65. (MIRA 18:7)

1. Moskovskiy pedagogicheskiy institut imeni Lenina.

NAUMOV, Yu.I.; LUKHACHEV, V.A.

Microstructure and electron-acceptor properties of the sulfofluoride group. Dokl. AN SSSR 163 no.6:1404-1407 Ag '65.

(NIRA 16:8)

1. Laboratoriya khimicheskoy i fizicheskoy khimii pri Moskovskom pedagogicheskom institute im. V.I. Lenina. Submitted January 30, 1965.

1970, 10.7. 1970. 1. .

Synthesis of diene compounds containing a sulfonamide  
group. Zhur.pril.khim. 28 no. 11:563-566 11 '66.

(MIRA 18:1.)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut im.  
V. I. Lenina. Submitted June 1, 1966.

IZMAIL'SKIY, V.A.; CHIRIKOV, V.V., Ye.V.

Genetics of the spectra of benzene-*o*-families derivatives.

Dokl. AN SSSR 166 no.1:114-117 In '66.

(MIRA 1967)

L. Laboratoriya khimii krasitel'ov i problemy tsvetnozhizni  
Moskovskom pedagogicheskoye instituta im. V.I. Lenina. Submitted  
May 20, 1965.

CHERILISKIY, A.S.; POLEVSECHNIKOV, P.F.

Microstructure of thiophene and the genetics of structure. Dokl.  
AN SSSR 159 no.5:1083-1086 D '6; (MIRA 1961)

1. Laboratoriya khimii krasiteley i problemy teoreticheskoy i prikladnoy khimii  
Moskovskom pedagogicheskoy universitet im. V.I. Lenina. Pred-  
stavleno akademikom M.I. Kabachnikom.

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.

Absorption spectra of 3-keto-2,3-dihydrothionaphthene and its substitution derivatives. Part 7: Benzylidene derivatives of 5 nitro-3-keto-2,3-dihydrothionaphthene. Zhur. ob. khim. 35 no.3:520-524. Mr '65. (MIRA 18:4)

MILIIARESI, Ye.Ye.; IZMAIL'SKIY, V.A.

Theory of the origin of the absorption spectra of 2,4-dinitroaniline and 2,4-dinitrodiphenylamine. Experimental confirmation of the presence of quasiautonomous chromophore systems. Zhur. ob. khim. 35 no.5:776-785 My '65. (MIRA 18:6)

1. Laboratoriya khimii krasiteley i problemy zavetnosti pri Moskovskom pedagogicheskom institute imeni Lenina.

25(7)

SOV/117-59-2-18/27

AUTHOR: Izmalkov, A.A., Engineer

TITLE: The Punching of Fastening Holes (Probiivka krepezhnykh otverstiy)

PERIODICAL: Mashinostroitel', 1959, Nr 2, pp 30-31 (USSR)

ABSTRACT: The author describes and praises his invention; a special die for punching holes along the rims of the crown of carbon steel discs of segment steel saws. Previously, such holes were drilled by drilling machines. The discs were 1.5-1.8 mm thick, the holes had 4-5 mm in diameter. The drilling of holes done by the Kirzhach and Minsk tool plants produced irregular holes with burrs. The new die made of steel R18, when properly thermo-treated, made up to 30,000 punchings without regrinding. It has been in operation for more than one year. The holes punched by the die were much more exact and cleaner than the holes made by drilling. The rate of production was increased two times. The new die

Card 1/2

*IZMALKOV A. Ya.*  
IZMALKOV, A. Ya.

"On the Oil-Less Binder "P" used at the Plant "Serp i Molot"

report presented at Scientific-Technical Session on Progressive Technology of Casting Molds, organized by the NTOMASHFROM of the Khar'kov Oblast', in Khar'kov, 14-16 Nov 1957.

Liteynoye Proizvodstvo, 1958, No 4, pp. 28-30

GUBIN, Georgiy Viktorovich; KUCHER, Aleksandr Mikhaylovich; ENKOV,  
Gennadiy Vasil'yevich; IZMALKOV, Aleksandr Zakharovich;  
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